‘To review the Impact of Brexit and the COVID-19 pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically tier-three construction firms’

Mr David Linehan

10028257

Dissertation submitted in partial fulfilment of the requirements for the degree of

Master of Business Administration (Project Management)

at Dublin Business School

Supervisor: Mr David Duff

May 2024

Declaration

I declare that this dissertation that I have submitted to Dublin Business School for the award of Master of Business Administration (Project Management) is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.

Signed: Mr David Linehan

Student Number: 10028257

Date: 18/05/2024

Acknowledgments

Several individuals have helped shape my MBA Journey and a few paragraphs will unfortunately not encapsulate all, but I could not have achieved this incredible feat without you all. Firstly, my parents Brid and Kevin Linehan. What I have achieved professionally, academically, and personally is due to your hard work and dedication, I am forever grateful. The education and opportunities provided to me are something I express my deepest gratitude for, this MBA is as much mine as it is yours. My success is built on the foundation you have provided. To my sisters Deirdre Linehan and Marie Linehan. To my partner Emer O'Byrne for your ongoing support, love, and kindness, not only a great partner but a best friend.

From an academic perspective, my sincere appreciation to my dissertation supervisor David Duff for his continuous support, guidance, and patience throughout this journey. DBS as a whole and the lecturers I had the privilege to learn under during my 2 years, all have shaped my professional career. My classmates, I wish them every success in future endeavours. For all the research participants who were interviewed as part of my Dissertation, giving up their time to help shape the findings, this dissertation would have not been possible without your valuable insights.

Finally, to my late Grandmother Bridget McCarthy of Ballydehob, West Cork. She was a true lady and has helped instil the values I hold today of respect, honesty, and hard work. I know she is looking down today proudly and she is always on our minds. She always emphasised the importance of education for a brighter future for her children and grandchildren. Your star shines brightly in the sky, farewell my friend but not goodbye.

Abstract

This dissertation critically evaluates the dual impact Brexit and the COVID-19 pandemic had on the sourcing of marble for the luxury commercial development sector in Ireland, specifically on tier-three construction firms (for which the vast majority of construction firms in Ireland fall within). The direct impact of both the geopolitical fallout from Brexit and the health crisis induced by COVID-19 had on the macroeconomic environment for tier-three Irish construction companies in sourcing marble resulted in complexities around new trade barriers, uncertainties disrupting established supply chains, changes to governmental policies brought about in rapid succession due to successive lockdowns, global lockdowns worldwide, labour shortages, amongst others.

This study employs a qualitative research approach providing valuable insight from industry leaders within three construction companies utilising semi-structured interviews conducted with mid to senior management and subsequent findings analysed, intending to paint a comprehensive picture of these impacts. The research revealed a significant strain on tier-three construction firms during this period. Negotiating powers of these firms were impacted due to market fluctuations and volatility brought about by Brexit and COVID-19. It revealed the strategies adopted by these firms including diversification of supply sources, employing procurement specialists as a means to mitigate against these market events. The findings contribute to a deeper understanding of the resilience and adaptability of smaller players in the construction sector facing global challenges and offers insights into potential policy and managerial responses to mitigate such impacts in the future.

In conclusion, the research served as a microcosm for studying the broader implications of global disruptions on niche supply chains such as marble, providing valuable lessons in adaptability and strategic foresight in an increasingly unpredictable global market and highlights how these firms can learn lessons to adapt in a post-Brexit and post pandemic world.

Table of Contents

Declaration 1
Acknowledgments 2
Abstract 3
Tables of Figures 8
CHAPTER ONE 9
Introduction 9
1.1 Introduction 9
1.2 Aims and Objectives of the research 11
Research Question 12
1.3 Research Context 14
CHAPTER TWO 17
Literature Review 17
2.1 Introduction 17
2.2 Brexit 18
2.3 COVID-19 Pandemic/Coronavirus 20
2.4 Tier-Three Construction Firms 24
2.5 Luxury Commercial Development Sector 26
2.6 Marble 29
CHAPTER THREE 32
Research Methodology 32
3.0 Introduction 32
3.1 Research Design 34
3.2 Research Philosophies 34
3.3 Research Approach 36
3.4 Research Strategy 37
3.5 Research Choice 38
3.6 Time Horizons 39
3.7 Sampling 39
3.9 Research Ethics 41
3.10 Research Limitations 42
3.11 Data Analysis 43
Familiarisation with the data 44
Coding & Theme Generation 44
3.12 Finding from the Data Analysis 46

3.13 Difficulty sourcing marble due to Brexit and COVID-19 46
3.14 Impact on Construction Programmes 47
3.15 Broaden Supplier List for sourcing marble. 48
3.16 Cost increases absorbed by the client. 48
3.17 Utilising different material (typically less expensive stone as an alternative) 48
3.18 Additional Procurement Specialists 49
3.19 Government support needed for Irish Quarries 49
3.20 Reviewing Themes & Reporting 50
CHAPTER FOUR 51
Findings, Analysis and Discussion 51
4.0. Introduction 51
4.1 Impact of Brexit 52
4.2 Impact of The COVID-19 Pandemic 55
4.3 Correlation between both constructs Brexit and COVID-19 58
4.4 Marble Industry in Ireland 60
CHAPTER FIVE 62
5.0 Recommendations 62
5.1 Conclusion 64
BIBILOGRAPHY 65
APPENDIX 76
Recruitment Email/Material 76
Information Sheet for potential participants 79
Consent Form 80
Semi Structured Interview Format 83
..... 84
Semi Structured Interview 1 85
..... 86
..... 87
Semi Structured Interview 2 88
..... 89
..... 90
Semi Structured Interview 3 91
..... 92
..... 93
Semi Structured Interview 4 94

..... 95
..... 96
..... 97
..... 98
Semi Structured Interview 5 99
..... 101
Semi Structured Interview 6 102
..... 103
..... 104
Semi Structured Interview 7 105
..... 106
..... 107
Semi Structured Interview 8 108
..... 109
..... 110
Semi Structured Interview 9 111
..... 112
..... 113
..... 114
Semi Structured Interview 10 115
..... 116
..... 117

Tables of Figures

Figure 1:(Wijffelaars, M. 2020) 22
Figure 2: (Government of Ireland Report, 2022, p.22) 23
Figure 3: (RICS Report, 2021) 25
Figure 4: (RICS Report, 2021) 25
Figure 5: (Kelly, 2009) 29
Figure 6: The research onion (Saunders et al., 2012) 33
Figure 7: Developing your research philosophy (Saunders et al., 2019) 35
Figure 8: Deductive v Inductive (Saleem & Burney, 2008) 37
Figure 9: Thematic Analysis Processes (Kampira, A. Meyer, J.2019.P6) 44
Figure 10: Top 40 Building Contractors 2023 (Irishconstructionnews, 2024) 62

CHAPTER ONE

Introduction

1.1 Introduction

The dual impact of the UK withdrawal from the EU and the subsequent COVID-19 pandemic had far-reaching consequences to the Irish economy, consequences which are still being felt in industries such as Construction to this present day, '*most supply chains have been disrupted and the inability of suppliers to deliver key construction materials for projects, especially large and complex ones'*, (Husien et al., 2021). The sourcing of niche products, such as marble, for smaller tier-three construction firms to be utilised in luxury commercial development projects faced logistical and financial challenges in a volatile market with lockdowns, shortage of materials, delays in transportation, higher end cost to the user, all were a fall out of the consequences of Brexit and COVID-19.

Within the luxury commercial development sector, specifically the fit-out industry, marble is a sought-after material to use due to its aesthetics, durability, versatility in style and positive environmental impacts. *'The use of natural stone as facade cladding has been shown to have much lower life cycle costs and they are more environmentally friendly than comparable products of concrete, glass, and steel'* (Schouenborg et al., 2007).

Marble is highly sought after in high end commercial developments as the overall finish and visual appearance of marble can increase the end rent achieved, type of covenant in situ. While trends change in the construction sector, marble is a style that remains constant with interior designers.

Specialised types of construction firms typically utilise marble in fit out, these are defined as 'Tier-Three Firms'. The 'tier' classification helps to differentiate companies based on their overall size, balance sheet and number of employees predominantly, however it is not strictly

defined. *'Tier-three builders are those with a turnover of less than $100 million, which most of the building industry falls into. These range from mid-tier companies that do commercial and apartment projects around $5-10 million, or smaller fit-out builders with projects under $1 million'* (Bradely, C, 2020). The ability of tier-three firms to source marble was impacted during Brexit and COVID-19 due to a number of interlinking factors which will be detailed and analysed in this research paper.

Brexit has fundamentally altered the trading landscape between the UK (Including Northern Ireland) and Ireland. As an island nation Ireland is heavily dependent on imports, a 2022 CSO report states '*Ireland imported almost €104 billion of goods in 2021'*. The logistical challenges faced by small tier-three firms will be reviewed throughout this research paper, while the EU-UK trade and Cooperation Agreement achieved '*100% tariff liberalisation. This means there will be no tariffs or quotas on the movement of goods produced between the UK and the EU.'* (UK Government Report, UK-EU Trade and Co-Operation Agreement, 2020) the complexities around rules of origin and potential for misclassification sets the scene for the importance of this research.

With the onset of COVID-19 in January 2020, *'WHO declares Covid 19 a Public Health Emergency of International Concern'*, (European Medicines Agency, 2023). Closures of marble quarries and processing plants were seen particularly in countries such as Italy, impacted heavily by the virus. Italy is a major marble supplier, Countrywide lockdown in these countries lead to delays in extracting the material, which in turn affected delivery timelines in Ireland, with many of the firms opting to source a different material, such as granite or an equally approved substitute stone.

The research being proposed is being undertaken to inform those employed within the construction industry, those shaping governmental policy, to review and implement a 'lessons

learned approach' and for those within an academic setting. Placing the focus on one specific material utilised by a specific sub-section of the construction industry and analysing challenges brought about due to a worldwide pandemic and the exit of UK from the EU, is important tool and one which should aid possible further exploration of the impact on additional materials such as copper, zinc etc. Research of this kind has never been undertaken in an Irish context. As noted by D. Anthony Miles in 'Identifying and Defining the Seven Research Gap', the research is being undertaken due to a knowledge void gap specifically within the Irish context '*Desired research findings do not exis*t' (Jacobs, 2011; Müller-Bloch & Kranz, 2014; Miles, 2017).

Owing to the lack of research of its kind currently being conducted within an Irish context, literature will be examined on COVID-19, Brexit, the construction industry and assumptions and parallels will be drawn from the research.

The research findings were obtained from accredited academic sources of literature and experts in the construction industry through semi-structured interviews.

1.2 Aims and Objectives of the research.

Analysing the dual impact both Brexit and COVID-19 had on tier-three construction companies in terms of logistics in the sourcing of marble for luxury commercial development projects in Ireland will give the reader a unique insight into the specific challenges and complexities faced and inform future lessons surrounding adaptability for subsequent unexpected volatile market situations.

This research aims to explore common themes identified throughout the analysis of related literature and the conducted interviews to enable the reader to form a clear and conscious opinion on the subject matter at hand. The research will predominantly examine the time frame

during Brexit and COVID-19, as well as a post-Brexit and post-COVID-19 analysis. An overarching aim of the interviews is to identify any additional obstacles encountered which are not yet defined in the literature. Such research has never been carried out in an Irish context and little research in an international setting.

The research objectives include:

- To identify common themes throughout the interviews on the impact of the COVID-19 pandemic and Brexit on logistics in the sourcing of marble for the luxury commercial development sector in Ireland specifically on tier-three construction firms
- To identify any potential correlation between both constructs, Brexit & COVID-19, in terms of potential impacts in relation to transportation, availability, challenges and opportunities, strategies designed to mitigate risk, with a view to future supply chain.
- Evaluate any industry obstacles identified in the interviews which have not been seen in published research, with a view to provide aid in future research conducted within the Irish Market.

Research Question

The ability of a researcher to gauge sub-questions that arise from a posed primary research question is a critical tool as *'sub-questions will help you formulate the questions you would ask on a survey or in structured interviews, because these are the procedures and issues that you will need clarified to answer the central question'* (Nova Southeastern University,2024)

The primary question being asked and the arising sub-questions are laid out below.

What impact did Brexit and the COVID-19 pandemic have on the sourcing of marble for the luxury commercial development sector in Ireland, specifically on tier-three construction firms?

This is the primary question posed for the research paper and was intended to specifically reflect the direction that the research is going to take, and to focus the research to ascertain the information required to answer the research objective. Reflective thematic analysis is the approach being utilised throughout the interviews which lends itself to this qualitative themed dissertation title.

A number of specific sub-questions are included below, derived from the primary research question.

How did your firm, and the tier-three contracts in general, navigate the trade and documentation complexities around Brexit for the sourcing of marble as material?

The challenges faced by tier-three firms with regards to rules of origin brought about by Brexit and increased documentation and taxation, the researcher gained a greater understanding of the volatility of the market at this time and how these firms circumnavigated changes in this unchartered period of history as defined in many research journals.

What changes could be implemented to increase marble production in Ireland rather than being dependant on EU, Asian and Middle Eastern Countries?

By formulating an answer to this question, the research gains an insight into microeconomic factors helping or hindering the indigenous marble/quarrying industry in Ireland and may lead to additional future studies in terms of cost of doing business in Ireland, government initiatives, and the formation of a cooperative and lobbying body for indigenous quarrying firms.

What are the lessons learned from COVID-19 and Brexit for tier-three contractors that could be beneficial for future unexpected events of crises in terms of marble supply in the future in an Irish context?

By answering the above question, it shows a natural progression of challenges and issues faced during the COVID-19/Brexit period for tier-three Irish construction companies in sourcing marble for luxury commercial development projects and lessons-learned approach which will aid opportunities for future research on differing material. It is a holistic question and encompasses the entire subject matter.

Following conclusion of this research, tier-three construction firms will have a grasp of the basic constructs on the impact which Brexit and COVID-19 had on logistics in the sourcing of marble on luxury commercial development projects in Ireland, but it may aid further research into additional materials. The findings these firms experienced through these volatile market conditions can act as a benchmark to navigate the complexities of future events.

The answers to these questions will fulfil the research objectives set out above.

1.3 Research Context

The RICS (Royal Institute of Chartered Surveyors) is a '*globally recognised professional body, everything we do is designed to effect positive change in the built and natural environments' (*RICS, 2024*)* and undertake research into the construction and surveying industry with valuable research undertaken on the impact of Brexit and COVID-19 Pandemic on the Construction industry. A 2020 UK report stated, *'The economy has experienced a significant shock since the start of the coronavirus (COVID-19) pandemic; GDP has fallen dramatically, with record broad-based falls in output for production, services and construction.'* (Stephens, et al, 2020) Marsh, a leading construction insurance and risk advisor, comment the following

relating to the joint effects of Brexit and COVID-19 on the construction industry: *'In November 2021, the increases in construction materials cost were at their highest levels in 40 years, reported RICS. The Institution forecasts an increase of 10% in material prices going into 2022, along with an increase in tender prices in the range of 5% to 6%.'* (Fitzgibbon, 2022). With such volatile market conditions and no research conducted in an Irish context on the impacts on tier-three construction firms in the sourcing of marble for luxury commercial development projects, the practical necessity was a major factor in exploring the topic.

As noted from D. Anthony Miles 'Identifying and Defining the Seven Research Gap', the research is being undertaken due to a knowledge void gap specifically within the Irish context *'Desired research findings do not exist'* (Jacobs 2011; Müller-Bloch & Kranz, 2014; Miles, 2017). Much research has been undertaken internationally concerning marble production in the EU. This research relates to well-known exporters of marble from countries including Italy, but little to no research has been undertaken in an Irish context, this may be due to the scale of production as seen in the following quote '*In Italy, there are nearly 4,900 active quarries, a quarter of which are concentrated in only two regions (Lombardy and Veneto) which together have on their territory more than 1,000 authorized quarries.'* (EU Commission, Italy Country Report,2019, p4).

Up to date reports on the number of marble quarries in Ireland is limited, with a 1994 study undertaken by Geological Survey of Ireland noting only three active marble quarries, Cashel Co Donegal; Barnanoraun, Co Galway; and Lissoughter, Co Galway. The report notes *'Following the publication of the 1988 edition of this Quarry Directory it became apparent that there was a demand for such a Directory from planners, economists, engineers, geologists, and sales representatives, as well as from consumers and producers of natural materials'* (Claringbold, K., Flegg, A. et al, 1994, p1) the report states '*Since the first edition in l988*

however, 19% of the 256 quarries and pits then listed are known to have ceased operation. A further 15% have not responded to our enquiries and may be closed or only sporadically active.' However, a subsequent economic construction boom and recession would have altered the number of quarries in operation as in a construction boom more rock is required due to strong construction output and less in recessionary times. The 1988 report does not specify the number of quarries for the extraction of Marble specifically hence the necessity for this research to look at this from a 21st century viewpoint.

The Multifaceted research as allude to above will aim to understand the complex and diverse constructs of Brexit and COVID-19 and establish any potential links between these constructs. It is important to highlight it is not a single faceted linear research question, but the research question ties in Brexit, COVID-19, tier-three construction companies and the luxury construction development market which will lead to a rich data collection tool.

CHAPTER TWO

Literature Review

2.1 Introduction

The Literature Review akin to the name is a review of literature of a chosen topic. '*They give an overview of a topic's theoretical background. Researchers use literature reviews to identify gaps in existing knowledge and to set the context for their research studies'* (DKIT, 2024) furthermore, *'Researchers use literature reviews to identify gaps in existing knowledge and to set the context for their research studies'.* (DKIT, 2024)

The Literature review will firstly *'provide an introduction to the area, providing relevant theory and research and narrowing down your focus to your proposed research'* (DBS Postgraduate Business Dissertation Guidebook, 2024)

The review of the literature undertaken is defined as a traditional literature review; '*The traditional social science and business management literature review is useful in identifying gaps in knowledge',* (Arshed & Dansen, 2015).

Current literature from academic and accredited sources on the topic were examined including Dublin Business School Library/EBSCO Library, Google Scholar, CIF Reports, CIS Reports, SCSI/RICS reports, Industry reports, Research Gate, Governmental policy reports, with conclusions and findings presented will align closely from the body of literature examined. The analysis of the literature in a structured format will endeavour to answer the research question, highlight further research to be undertaken on the topic and identify potential gaps within published literature.

The overarching objective of this research is to review and critique the impact of Brexit and the COVID-19 pandemic on logistics in the sourcing of marble for the luxury commercial

development sector in Ireland, specifically tier-three construction firms. The dysergy created by the combination of Brexit and COVID-19 on tier-three construction companies will be examined in silo, and any interconnections of the constructs will also be analysed, and conclusions drawn demonstrating the need for the research, adding to existing literature and aid future research in this area.

2.2 Brexit

'Brexit, as the act of Britain exiting the EU has become known' (Sampson, 2017) was passed by a slim margin in 2016 *'most of Britain's establishment backed remaining in the EU, 52 percent of voters disagreed and handed a surprise victory to the leave campaign'* (Sampson, 2017). By the narrowest of margins, the vote was carried. The ripple effect that the passing of Brexit caused on the capital markets is still felt almost 8 years later. Market reports have revealed overwhelmingly that Brexit continues to affect the construction industry, specifically in terms of lengthening programs, additional documentation requirements leading to increased workload, additional tariffs etc. Ireland as an island nation which shares a significant trading relationship with the UK, is uniquely positioned in relation to the ramifications brought about by Brexit. Bordering an EU Country posed and still poses significant challenges north and south of the border.

Literature on the subject matter describes challenges with the new regulatory landscape brought about by goods travelling between the UK and EU countries including VAT liabilities and tariffs. A recent Forbes article stated '*When the UK was part of the EU, these supply chains operated efficiently with minimal VAT reporting required and no customs duty consequences when goods moved to/from the UK and EU. However, with Brexit came the UK's exit from the EU Customs Union and the simplifications with membership. This meant that the movement of*

goods became subject to import taxes when moved between GB and the EU in the same way as a general supply of goods between GB and third countries.', (Marchant, 2021)

While the Trade and Cooperation Agreement introduced on 24th December 2020 was a positive policy implemented, it will not *'match the level of economic integration that existed while the UK was an EU Member State*' (EU Commissioner Report, 2021). The basis of the agreement critically '*provides for tariff-free, quota-free trade between the EU and the UK and for sectoral cooperation in a number of important areas'* (Department of Foreign Affairs, 2023)

While the agreement aimed to eliminate tariffs on goods, non-tariff barriers such as increased paperwork, health and safety checks and original rules have indirectly increased costs. For example, in the transportation of marble, rule of origin is defined from the UK Government as '*To export tariff-free under the Trade and Cooperation Agreement, goods must meet the UK-EU preferential rules of origin. This means that there must be a qualifying level of processing in the country of export to access zero tariffs. This applies to EU origin goods imported and moving through the UK from an EU member state to another EU member state, as well as goods imported from outside of the UK or EU*' (HM Revenue, 2023). While simplistic on paper, it has caused delays, confusion and additional costs on stone, and marble in particular which has impacted on tier-three contractors. The rules of origin is a determination whether an export is considered British or not. '*It is clear that many UK businesses exporting to the EU are going to be hit by tariffs,' "Businesses have also been completely blindsided by the 'rule of origin' part of the deal, which leaves them at a major competitive disadvantage when selling in the EU.'* (Dale, M. 2021) Marble as a material which is sourced typically overseas but enters Ireland through British ports, implications have been significant.

Brexit has caused disruptions in supply chains, Pinsent Masons LLP a leading law firm in 2019 report noted '*Brexit's main effects on supply chains are increased costs and delays*.', (Francis, 2020), with the effects felt acutely by the construction firm in the sourcing of materials, due to shut down in activity in turn leading to limited availability of products being manufactured putting upward pressure on pricing. A construction industry services report in November 2021 notes *'a perfect storm'* brewing '*record timber prices, Covid-related stoppages, depleted inventories, delays in shipping and Brexit-related transport issues have increased the cost of building materials required for the construction of new homes*.' (Dargan, 2021). While timber in construction projects would be a standard material, the likes of marble would be for bespoke projects. Delays in sourcing standard off-the-shelf products was noted, the reader can envisage the impact on materials such as Marble.

2.3 Covid 19 Pandemic/Coronavirus

'*Founded in 1948, WHO is the United Nations agency that connects nations, partners and people to promote health, keep the world safe and serve the vulnerable – so everyone, everywhere can attain the highest level of health'* (World Health Organisation Website,2024). The WHO functions to guide governmental decisions on healthcare matters and were the '*global coordinating agency for the response to the COVID-19 Pandemic'* who defined the COVID-19 pandemic as '*The coronavirus disease 2019 (COVID-19) pandemic is a global outbreak of coronavirus – an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Cases of novel coronavirus (nCoV) were first detected in China in December 2019, with the virus spreading rapidly to other countries across the world. This led WHO to declare a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 and to characterize the outbreak as a pandemic on 11 March 2020'.*

The effects on the construction industry due to the pandemic is in the majority negative from the literature. '*Following the spread of the virus, many countries started implementing several measures to reduce movement of people, and that has mainly obstructed the construction because it requires on-site work and every project member must be available to work, check, and monitor all the work activities. Job losses is also a major disaster during the escalating situation of the pandemic. Globally, millions of employees have lost their jobs amid the COVID 19 crisis. In the construction industry, all the employees lost their jobs and most of the small enterprises are not able to pay salaries during lockdowns',* (Gamil & Alhagar, 2020).

The literature showcases the impact governmentally introduced lockdowns and restrictions had on halting the activities of construction companies and highlights an overarching view of a volatile market with tier-three construction firms emerging from one crisis to the next, from the onset of Brexit to the commencement of a global pandemic and a subsequent war in Ukraine.

Historically, Italy is an important supplier of marble, and the effects of the COVID-19 pandemic had on this country as an early epicentre of disease were significant, as noted by a BBC report in 2020 '*Much of Italy is now in lockdown, including the densely populated Northern Lombardy region. The whole country has a night curfew'* (BBC News, 2020). A large proportion of Italian marble quarries are located in the Lombardy region including Bergano, Monza, Cremona, Mantua and Varese, and the curfews introduced on business operational quarrying hours had a knock-on effect on global supply exportation of the material. A Senior Eurozone Economist, Maartje Wijffelaars, in 2020, described the impact COVID-19 had on the Italian economy as follows: '*The Italian economy is facing one of its darkest hours in modern history. After shrinking by 5.4% y-o-y in the first quarter, it is set for a much larger*

contraction in Q2. We will have to wait until the end of this month for the first official GDP estimate, but the available data leaves little to one's imagination', (Wijffelaars, 2020).

Figure 1 visually illustrates GDP volumes brought about due to the impact of COVID-19, which had an detrimental effect on Italy's Marble production impacting on Irish tier-three companies in terms of supply shortages and increased prices.

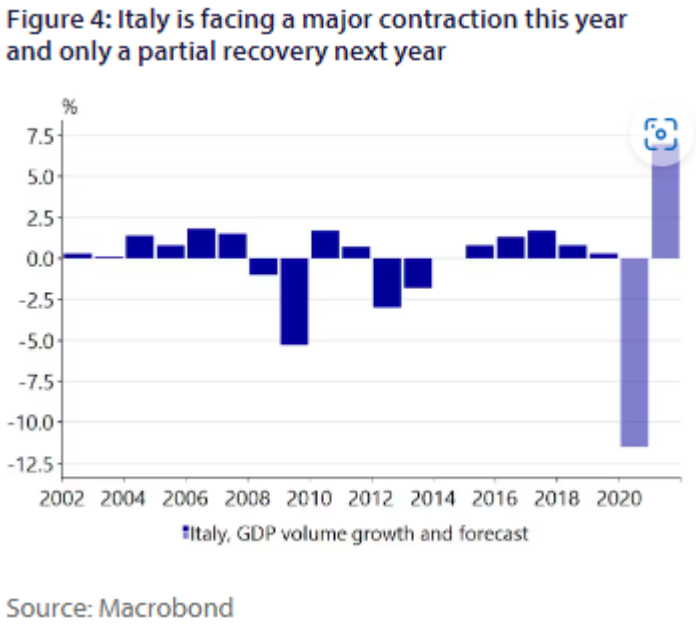

Figure 1:(Wijffelaars, M. 2020)

The literature also noted the limitation of air and sea transportation brought about from COVID-19 induced restrictions, thus impacting on the sourcing of marble for construction projects. Reduced cargo capacity, increased freight costs and prioritisation of essential goods I including PPE equipment for healthcare settings were all noted in the literature leading to an increase in price of construction material including marble to import into Ireland. '*The Wholesale Price Index (WPI) for Building and Construction Materials provides a general indication of price trends in the sector. It is important to note that WPI is exclusive of VAT. Figure 4.3 below illustrates that the WPI has increased significantly for materials in 2021. Between January 2022 and May 2022, a 7 percent increase is noted in WPI for Materials. The*

current significant material inflation seen in 2021 and 2022 is attributable to the interplay between COVID-19, Brexit, supply chain disruptions, unprecedented weather conditions, and increased demand both nationally and internationally, and the conflict between Russia and Ukraine' (Government of Ireland Report, 2022, p.22). Figure 4.3 as noted in quote is referenced below as Figure 2.

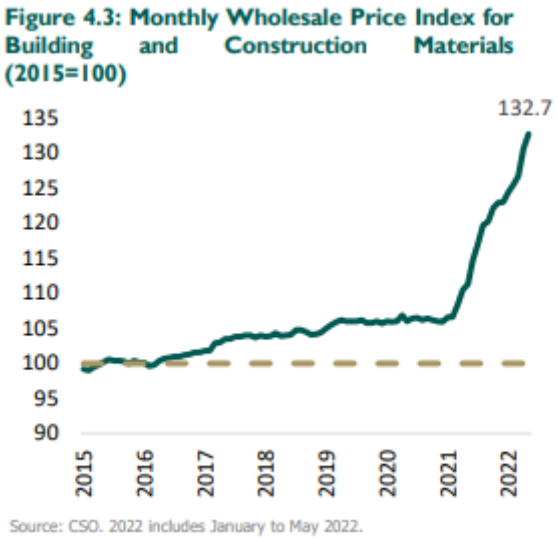

Figure 2: (Government of Ireland Report, 2022, p.22)

With a scarcity of material including marble, for tier-three companies less bargaining power and turn over than tier-one and tier-two companies, these challenges have been particularly acute.

The increased health and safety protocols including mandatory COVID-19 testing on construction sites, social distancing measures, and personal protective equipment (PPE) all had additional operational costs and added further layers of complexity and expense to the logistics of sourcing and on the handling of marble. '*We have also seen considerable intervention from the Health and Safety Executive (HSE) on construction sites, with spot checks and inspections*

taking place to ensure that sites are Covid-compliant' (Salau & Archer, 2020). It is noted from Construction leadership council 2021 in the UK, there has been seven versions of Site Operating Procedures issued, showing the changing nature of the pandemic and governmental requirements to stay COVID-19 measure compliant (Construction Leadership Council report, 2021).

2.4 Tier-Three Construction Firms

The literature notes the informal system of classifying construction firms in terms of turnover and number of employees, but it can vary from country to country. From an Irish or UK perspective, it is noted tier-three construction firms have a gross revenue of '*roughly £10m – £100 million pounds annual turnover. These companies form the bulk of the construction industry in terms of sheer number of companies if not turnover. These companies will build one-off houses, small apartment buildings, small schools and so forth*'. (RICS,2024)

Typically, fit-out contractors within the industry fall within tier-three classification and can be sub-contracted by main tier-one or -two companies due to project specialisms including fit-out where bespoke material and stone such as marble is often required for an end-user client, and hence can be defined as a specialist contractor.

While no literature is available specifically in relation to the impact of Brexit and the COVID-19 pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland for tier-three contractors, numerous studies by RICS have indicated margin erosion and spiralling costs for all contractors.

Figure 3 obtained from a RICS report of data from 2020 shows the cost of material in Ireland as greater than EU neighbours. Cost of materials noted at 58%.

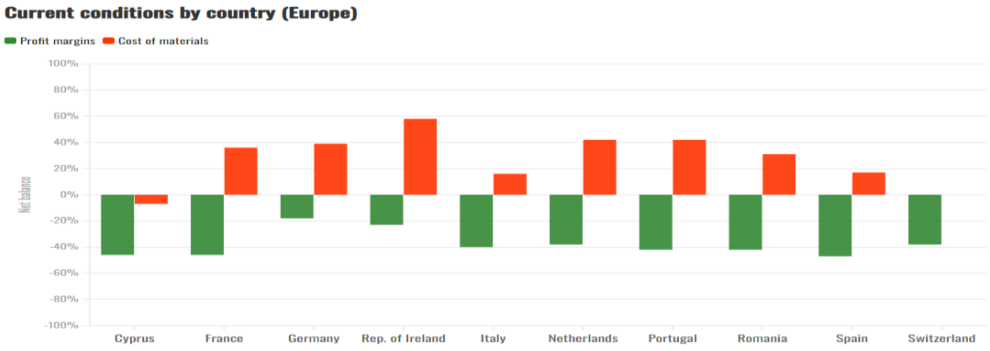

Figure 3: (RICS Report, 2021)

Figure 4 shows the market volatility during three quarters in 2020 in terms of increased material prices and eroding profits.

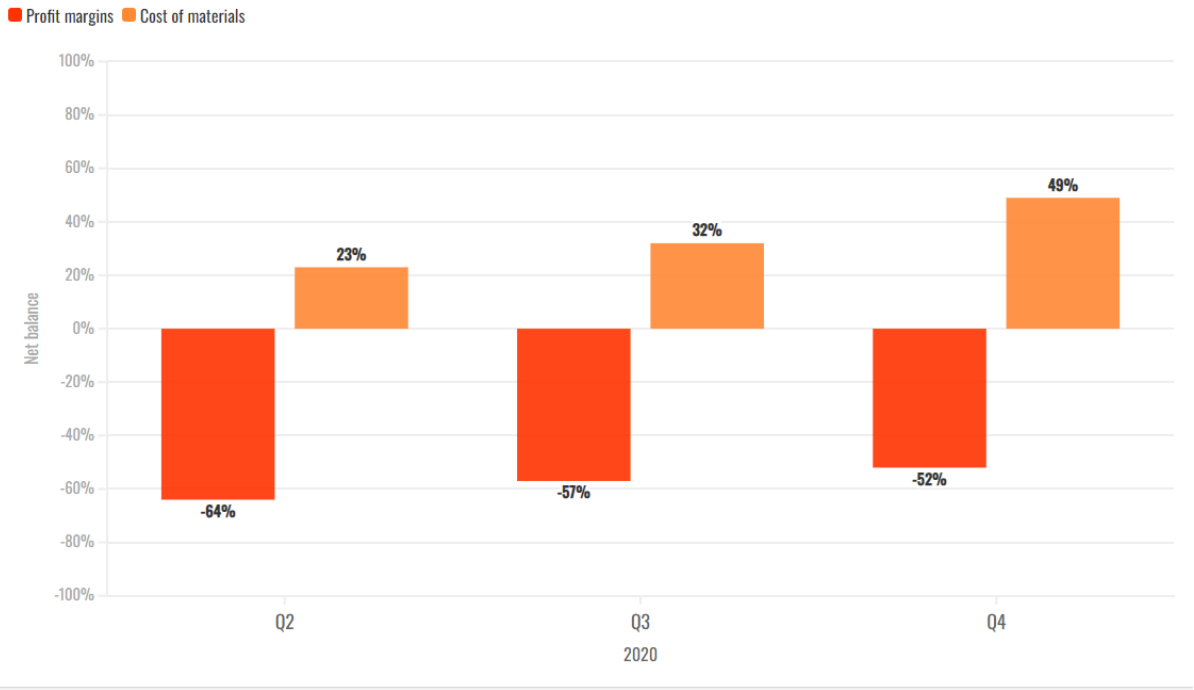

Figure 4: (RICS Report, 2021)

For smaller tier-three contractors during this period, the research has highlighted '*Liquidity and cash flow have been vital in recent months. Contractors entering the pandemic with a strong balance sheet and a healthy pipeline of work have typically found it easier to navigate the recent turbulence. Even before COVID-19, many contractors were very focused on cost. The pandemic has exacerbated this trend, with balance sheet and cash management now an even larger consideration.*', (McLennan, 2020). The ability for strategic adaptability was deemed as vital for these firms to stay liquid and continue to trade. Continuous innovation, flexibility and strategic planning is crucial for tier-three firms to navigate the complexities of sourcing marble in the new normal.

2.5 Luxury Commercial Development Sector

To fully encapsulate a definition for the luxury commercial development sector, luxury as a stand-alone construct first needs to be examined. '*An integrative definition of luxury has to reflect the subjective and multidimensional character of this concept simultaneously addressing financial (e.g., exclusivity), functional (e.g., product excellence), individual (e.g., personal enjoyment) and social value components (e.g., prestige and status)*' (Hennigs et al., 2022). Luxury Commercial Property is more than simply a visual appreciation of high-end property and luxurious finishes. It is important from the reader's perspective to fundamentally grasp the rationale behind landlord and occupiers of high-end commercial development seeking marble to be utilised and the important of tier-three firms in carrying out these works in comparison to standard fit outs with inferior products.

'*Developers in the luxury segment are constantly innovating to meet affluent buyers' changing tastes and preferences, incorporating sustainability features, wellness spaces, and bespoke customisation options. These trends influence the design and development of luxury properties, creating a niche market where exclusivity and opulence reign supreme. The quality of*

construction and the choice of materials in luxury real estate projects play a pivotal role in creating architectural masterpieces that exemplify luxury living. Property investment in high-end developments often focuses on superior craftsmanship and exquisite interior design. These elements not only enhance a property's aesthetics and overall appeal but also significantly impact its value in the luxury real estate market.' (Real Estate Blog, 2024)

Forbes a renowned luxury real estate disposals firm, real estate council member Marco Del Zotto state 'The generic categorization of luxury would be any property above grade to the rest of the market, with high-end finishes, architecture and property design.' (Zotto,D,M. 2020)

There is also the view of a trophy asset, on a Merger and Acquisition of a fully tenanted commercial block, the value paid as an industry norm is typically 6-8 times EBITDA/turnover depending on lease terms, rights to renew etc. The same rationale is typically not adhered to with luxury high end commercial assets. The sale of The Shelbourne Hotel is a prime example '*The trophy property had been bought in 2004 for €140m by a consortium that included developers Bernard McNamara and Jerry O'Reilly'*. (Mulligan, J. 2024) '*Archer Hotel Capital has bought the Shelbourne Hotel in Dublin city centre for an estimated €260m*' (Mulligan, J. 2024) A profit of €120 million. While the hotel was making strong profits, the end value was also partly driven by the history, nostalgia, international reception of the hotel and the luxury feel with high end marble is a big factor in this, situated within the trophy asset class.

Globally the demand for luxury assets is intensifying 'Despite the headwinds facing luxury spend, real estate remains a key battleground for luxury brands, with property acquisitions hitting a new high' (Selwyn, A. Hickey, M. 2024)

State of the art technology, luxurious furnishings and fixtures, every aspect of luxury commercial development is carefully curated to provide an unparallelled experience for end user, owner occupiers etc.

'*Natural stone, particularly marble, granite, and limestone, makes a striking statement in an office interior. These materials exude a sense of solidity and permanence, conveying a message of stability and success to clients and employees alike. The inherent veining patterns and variations in color within each stone slab make them unique and visually captivating. Beyond aesthetics, natural stone offers practical advantages. Marble, with its cooler tones, can create a sense of spaciousness in conference rooms or open work areas'* (Archi Hives, 2024). Such finishes can create a sense of exclusivity and luxury.

With the emergence of USA Based Pharmaceutical companies in Ireland with '*Thirteen of the world's top 15 medical technologies companies have international operations in Ireland, while all of the top 10 global drug companies have facilities here*' (IBEC Report. Shanahan, M. 2020, p3), the drive for luxury commercial development in Ireland rose to prominence during the Celtic Tiger era '*the advent of the Celtic Tiger is held to have signalled an era of widespread affluence and contentment. The years of sustained economic growth are held to have enabled people in the Irish Republic to banish the austerity of previous times in order to become sophisticated consumers, akin to their neighbours in other western European states*.', (Coulter & Coleman, 2009).

The graph below, in Figure 5, shows the level of bank lending in billions during the era of the Celtic Tiger which lead to the demand for luxury commercial development property being constructed. Strong foreign direct investment coming to the shores of Ireland fuelled the need for luxury commercial development and specialised contractors to undertake this bespoke work.

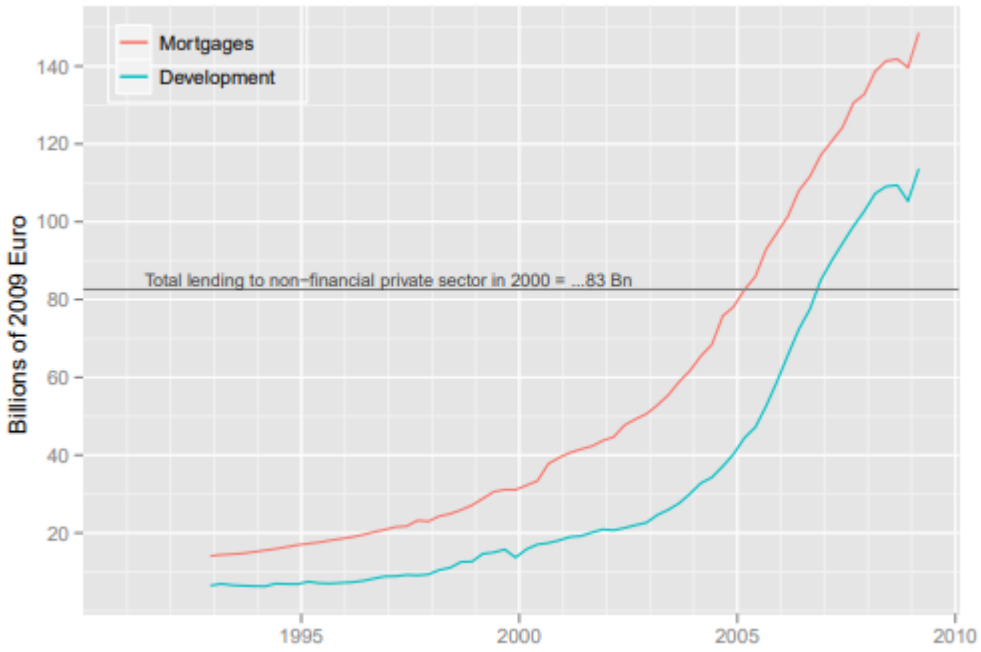

Figure 5: (Kelly, 2009)

'*With overseas companies such as Google and Facebook setting up sites in Dublin which is now established as an attractive outpost of Silicon Valley within Europe*' (Oyebamiji, M.2019, P21) the demand for luxury commercial development in Ireland shows no sign of dissipating.

The luxury commercial development sector continues to evolve and expand in Ireland, boundaries are continuously pushed in terms of finish, prestige, and exclusivity with tier-three construction companies to the fore in these projects.

2.6 Marble

'*Marble is a metamorphic rock composed of recrystallized carbonate minerals, most commonly calcite and dolomite'* (Shaltami, 2020). The research indicates the stone has origins in ancient Greece '*who were masters of the world's finest architecture, stone-cutting and sculpturing. They created exquisitely detailed statues and buildings which have lasted through the ages.*

For example, The Parthenon, built in 441-437 BC of solid Pentelicon marble, is a well-known symbol of ancient Greek civilization' (Shaltami, 2020).

Marble production is predominantly focused in four specific Countries '*Today, four countries quarry almost half of the world's marble. They are Italy, China, India and Spain',* (Mattock, 2014).

The literature notes some level of marble production in Ireland but highlights the complexities around licensing laws in Ireland as documented on The Department of the Environment, Heritage and Local Government 'Guidelines for Planning Authorities' 2004. '*Any fixed or mobile asphalt and tarmacadam plant constructed after 1987 requires a licence under the Air Pollution Act, 1987, where there are specific point air emission'* (The Department of the Environment, Heritage and Local Government, 2004. P13)

The report also states the requirement for a number of further licences to comply with environmental guidelines. The quarrying of stone was severely depleted during COVID-19 for multiple reasons '*When the initial lockdown came into effect, many companies found themselves faced with a dilemma. The message from the Government was to work from home where possible. But where this was not possible, and where two-metre social distancing could be maintained, construction and stone companies could continue to operate. The initial response from the construction sector was to shut down sites and see how the situation developed. This put an immediate pause on the demand for natural stone, so many companies reduced operations to skeleton teams, furloughing their remaining staff. There were also concerns about the availability of parts for machinery, many of which come from mainland Europe, as these countries were also in lockdown. Some companies in the natural stone sector, found themselves in a 'catch 22' situation. As material suppliers, they could not return to full operational capacity or bring 100% of workers off furlough until the demand for material*

became sufficient. Similarly, contractors were reticent to start reopening sites if there was the potential for a shortage of materials.', (Paine, 2020).

CHAPTER THREE

Research Methodology

3.0 Introduction

Research Methodology *'is the approach in which research troubles are solved thoroughly. It is a science of studying how research is conducted systematically. In this field the researcher explains himself with the different steps generally taken to study a research problem. Hence, the scientific approach which is adopted for conducting research is called methodology.'* (Mishra, B, S., Alok, S., 2017, P1)

This chapter elaborates on the research process and the methods utilised in developing the answers for the research questions. Various stages are undertaken within the research methodology which are underpinned by the six-stage Research Onion model set out by Saunders et Al '*which explains pictorially the various aspects of the research to be examined and planned in order to come up with a sound research design. In other words, the research onion guides the researcher through all the steps that need to be taken when developing a research methodology.*', (Tengli,M,B. 2020). It delves into the layers the researcher must uncover throughout the research design with each step equally important as the next.

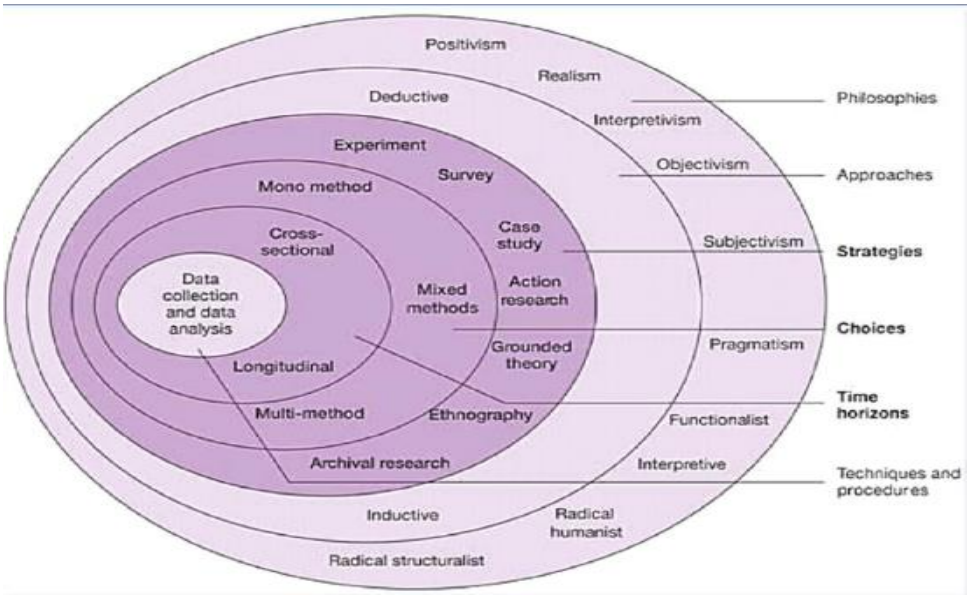

Figure 6: The research onion (Saunders et al., 2012)

'Similar to an onion, the layers are peeled backed through each section to examine each layer 'the systematic way is to peel it from the outside to inside, and this is what we have to do with the research onion as well.' (Tengli, M, B.2020, P2) This will be elaborated further in this chapter.

Interviews were undertaken to gather and collect qualitative data to aid in answering the overarching research question and sub-research questions. The structure of which involved a list of semi-structured reflective thematic questions between the researcher and participant with the primary aim for the researcher to undercover common themes throughout the interviews and factors, be they stand-alone or interlinking, of the constructs that leads to an answer to the research question.

The research onion explores firstly the outer layers including Research Philosophies and Research Approaches, the darker shading relates to the Research Strategies, Research Choices, and Time Horizons. The epicentre of the Onion focuses on techniques and procedures which are the core of the data analysis. Each section is interlinked, and none operate in silo, each section requires thorough analysis, and failure to critically evaluate and explore each section

will lead to incomplete data analysis. '*All the layers of research onion are interrelated and interdependent*' (Tengli, M.B.2020, P2)

3.1 Research Design

'*Research design which is more than just the techniques by which data are collected and procedures by which they are analysed. It is the overall configuration of a piece of research involving questions about what kind of evidence is gathered and from where, and how such evidence is interpreted in order to provide good answers to your initial research question. Secondly, it will help you to think about those research strategies and methodological choice that will work for you and, crucially, those that will not. For example, if you are particularly interested in understanding why something is happening, rather than being able to describe what is happening, it may be more appropriate to undertake your research inductively rather than deductively*' (Saunders et al., 2019).

'*It consists of the sources of data collection in the research, data collection techniques, data analysis, and the limitations of the research. In addition, ethical issues faced in the course of the research, as well as the constraints and limitations are discussed in detail here'* (Saunders et al., 2019)

This research is undertaking a qualitative research design and '*According to Saunders et al., 2019, a research design is categorized into three: (1) quantitative research design; (2) qualitative research design; and (3) mixed methods research design'.*

Sample size, including inclusions and exclusion criteria, all form a part of the research design.

3.2 Research Philosophies

As per the research onion (Saunders et al., 2019) the Research Philosophies are classified under ten headings. Research Philosophies are often influenced by the researcher's set of beliefs,

values and norms and from reading of the literature is a 'contested concept' so it could be summarised as a set of beliefs in which the research foundation is built upon.

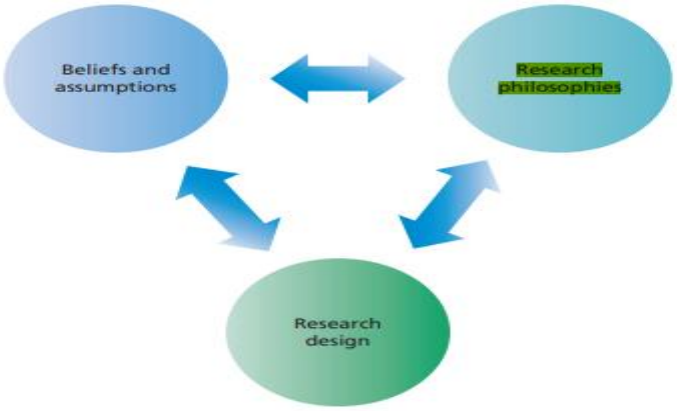

Figure 7: Developing your research philosophy (Saunders et al., 2019)

'*Qualitative research is often associated with interpretivism'*, (Goldkuhl, 2012)

The research philosophy that most closely aligns to the research being undertaken here is Interpretivism. '*The interpretivist view invites the researcher to investigate meaning behind the understanding of human behaviour, interactions and society.'* (Pulla and Cartar, 2018, P9)

Due to the qualitative nature of the research, the interpretivism approach closely aligns as '*Interpretivism uses qualitative research methods that focus on individual's beliefs, motivations, and reasoning over quantitative data to gain understanding of social interactions. Interpretivists assume that access to reality happens through social constructions such as language, consciousness, shared meanings, and instruments'* (Myers, 2008).

As this research reviews the impact of Brexit and the COVID-19 pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, focusing on tier-three construction firms, an interpretivism approach is utilised to gather information from a sample size of 10 people working with tier-three construction firms in Ireland and employed

in mid- to senior-management positions. The interviewer's aim is to highlight and uncover common themes brought about due to discussion points within the dialogue. An interpretivism philosophy is aligned to interviews as personal opinions are expressed and encouraged and this was the case for this research.

The interviews conducted will form the main source of primary data collection. The themes and analysis from industry experts will help shape the research and draw conclusions.

3.3 Research Approach

The research approach can fall under a Deductive or an Inductive reasoning. The research approach within this analysis falls under an inductive research approach.' *Induction is usually described as moving from the specific to the general*' (Saleem & Burney, 2008)

The Inductive Approach is '*generally carried out within the field known as informal logic or critical thinking*' (Saleem & Burney, 2008)

'This approach critically evaluates observations which aligns with Qualitative data collection. The aim is to deduce answers from the interviews and meaning from the data collected that will aid in answering the overarching research question and lay out possible impacts both constructs had on the sourcing of marble for the luxury commercial development sector in Ireland specifically on tier three construction firms. Inductive Approach deals with 'broader generalizations and theories' (Saleem & Burney, 2008)

As illustrated below in Figure 8, an inductive approach can be described as 'a ground up approach'.

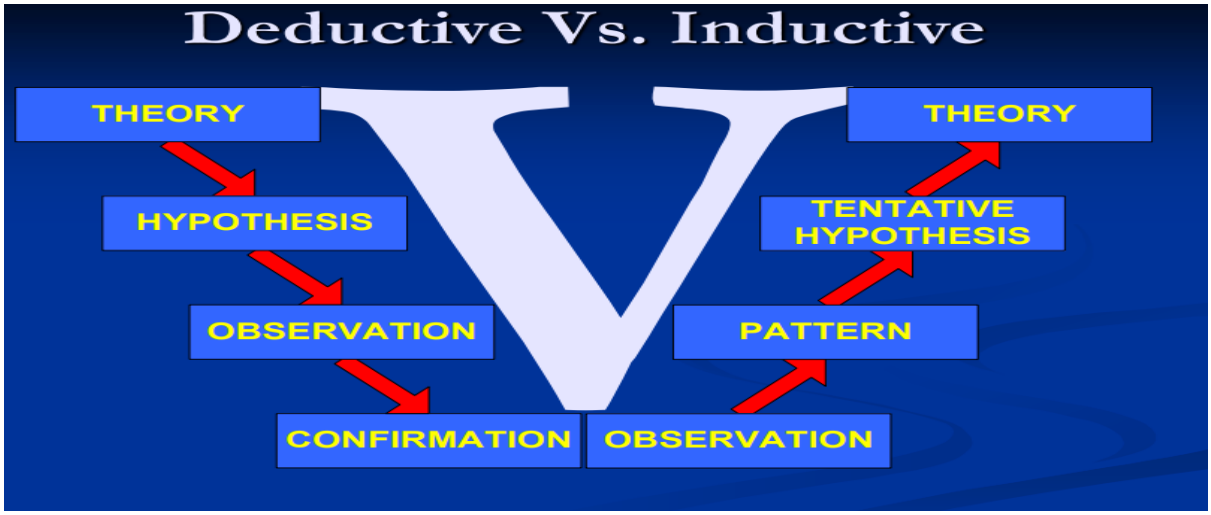

Figure 8: Deductive v Inductive (Saleem & Burney, 2008)

3.4 Research Strategy

A research plan of action that will guide the researcher to the aim of answering the overarching question is an important part of the dissertation and research process. As the analysis progresses and the research layers are peeled back and answered with the ultimate aim of getting to the core of the onion, the researcher has to evaluate the research strategy most appropriate to the particular research being answered, as one single strategy does not encapsulate all.

The research strategy describes how the researcher intends to carry out the work (Saunders et al., 2019). Including '*a number of different approaches, such as experimental research, action research, case study research, interviews, surveys, or a systematic literature review*.' (Thesismind, 2019)

The research topic is seeking to review the impact of Brexit and the COVID-19 pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically tier-three construction firms, this type of research is exploratory in nature which lends itself to experimental research and interviews with reflective thematic analysis being utilised in the interviews.

The choice of utilising interviews suits the type of research being uncovered '*With semi-structured interviewing, the open-ended nature of the question defines the topic under investigation, but also provides opportunities for the interviewer and interviewee to discuss some topics in more detail. If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use cues or prompts to encourage the interviewee to consider the question further. In a semi-structured interview, the interviewer also has the freedom to probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the interviewee*' (Mathers et al., 2000) which is suitable for the exploratory type of qualitative inductive research being undertaken and provides a good foundation for where results will derive from.

3.5 Research Choice

As per the Research Onion, the research choice can be split into three sections: mono-methods, mixed-methods and multi-methods. In mixed-method data collection, akin to the name, the researcher utilises both qualitative and quantitative methods, in comparison to a mono-method where the researcher is restricted to using either qualitative or quantitative data collection. Mono-Method is being undertaken in this particular research study in a qualitative format. '*In the mono method, a single data collection technique is utilized, followed by corresponding qualitative or quantitative analysis procedures. In the multiple method design, more than one data collection techniques and analysis procedures are employed'* (Collis and Hussey 2013).

'*Qualitative research can be defined as the study of the nature of phenomena and is especially appropriate for answering questions of why something is (not) observed, assessing complex multi-component interventions, and focussing on intervention improvement*.' (Bussetto, L., Wick, W., Gumbinger, C., 2020)

While a mixed- or multi-method analysis entails examination of quantitative and qualitative data, and perhaps a richer spherical rounding of the data, the availability of time was a factor in choosing a mono-method approach.

As the industry is constantly evolving and the market may be defined as being in a constant state of adaptation, qualitative analysis suited the research being conducted to construct a picture in a specific snapshot or time frame of history.

3.6 Time Horizons

'*Research can be grouped into two types based on time, i.e., longitudinal, or successive independent samples; and cross-sectional'* (Bryman and Bell 2015). This research falls under Cross sectional defined as a '*snapshot of a group of individuals' 'the subjects in a cross sectional study are simply chosen from an available population of potential relevance to the study question'* (Wang, X., Cheng, Z. 2020, PS65)

Longitudinal, akin to the name, are findings over a prolonged or longer time period. A cross-sectional study aligns to this research due to a defined and restricted time period in which to conduct the research hence was the approach chosen. Cross-sectional studies '*analyse data from a population at a single point in time*' (Wang & Cheng, 2020).

3.7 Sampling

The sample size was 10 people to interview in line with Sarker Paper '*The average number of interviews conducted was 40, with a maximum number of 175 and a minimum of 6'* (Sarker, S., Xiao, X., Beaulieu, T. 2013, pviii). The inclusion criteria comprise of Project Managers, Commercial Managers, Commercial Directors, and Chartered Surveyors employed within tier-three construction firms that source marble for use in luxury commercial development projects in Ireland. The exclusion criteria were as defined for inclusion above but employed within tier-

one and -two construction firms, and those working in tier-three construction companies outside Ireland. '*A number of sampling strategies are described in the qualitative methodology literature'* (e.g., Patton 1990). '*Indeed, a clear sampling technique help ensure that the cases being studied are of "substantive significance" or "theoretical relevance*"' (Dubé and Paré). The sampling was not company specific.

'*Purposeful sampling is widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest'* (Palinkas et al., 2015).

This research utilises purposive sampling, '*In this type of sampling, according to the purpose of the study, the members for a sample are selected. It is also called deliberate sampling'* (Bhardwaj, 2019) '*Purposeful samples are generally small in size, so their utility and credibility are questioned on the basis of their logic and purpose'* (Shaheen et al., 2019)

3.8 Techniques & Procedures

The researcher having peeled back the layers on the research onion, at the epicentre lies the data collection and the data analysis. This is shaped by decisions made earlier with a mono-method, cross-sectional, qualitative research approach being undertaken. Based on the overarching research question, the following questions were included in the semi-structured interview for personnel that adhered to the sampling criteria listed above.

- Can you discuss what involvements your firm has in general with sourcing marble as a material on construction projects?
- How did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?
- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

- Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients?
- Has the COVID-19 Pandemic / Brexit affected your sourcing strategy concerning marble?
- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?
- How have these events affected the costs of sourcing and shipping marble?
- Has the company considered implementing any long-term strategic changes in sourcing marble due to effects of Brexit and the Covid COVID-19 pandemic?
- How do you see the future of marble sourcing in Ireland given these events? A positive or a negative light?
- What lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to the luxury commercial development sector in Ireland?

Due to the semi-structured nature of the interviews, follow-up questions may be required while also being cognisant of not skewing the data. The full set of interviews and answers can be seen in the Appendix.

3.9 Research Ethics

'*Ethical Research can be defined as a refined and internationally recognized process that ensures that researchers are engaged in good practices for research involving human or animal subjects. Ethics can be defined as the morally right thing to do and in the context of research ethics this involves the protection of humans and animals in research. This means that researchers have a duty of care for their human or animal subjects and researchers are responsible for how they manage their research*.' (Shuster, 1997).

The research did not involve interviews with subordinates or participants who are vulnerable to coercion or research involving deception.

The onus is on to researcher to follow ethical guidelines *'It is very important to engage in research with truthfulness and avoiding deception* (Saunders et al., 2019).

The information sheet supplied to participants highlighted '*The researcher will adhere to strict ethical guidelines and principles and will not anecdotally share any personally identifying information about you with anyone'.* (DBS information sheet as seen in appendix).

A consent form was signed by each participant prior to interviews taking place. Step were taken to ensure the participant felt at ease by reiterating interviews are confidential with each participant quoted the following:

'To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?'

'If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated also.'

3.10 Research Limitations

'Research Limitations are important to uncover, limitations the researcher encountered during the sequence of attaining data coupled with the limitations of the research i.e. previous studies may not have been carried out with the body of research literature simply not available 'Desired research findings do not exist' (Jacobs 2011; Müller-Bloch & Kranz, 2014; Miles, 2017).

The multifaceted nature of this research and the need to understand the constructs that shape the research question individually and subsequently collectively can lead to blockages with the

research. Research on the individual constructs exist but collectively may not exist which was the case in this research. To avoid unreliable research, vetting of the participants to ensure they matched the criteria laid out above was paramount, as such a rich tapestry of primary data could be uncovered.

The research question specifically focuses on the niche material of marble, which did limit the findings as more standard materials such as timber, copper etc. have more accessible data available for review within a construction context. Additionally, the research particularly focuses on the luxury commercial development market which limited sectors such as the residential sector, and a further filter implemented by specifically honing in on tier-three firms. The research exclusively examines an Irish context and requires all candidates have experience of utilising marble within a professional setting on high end luxury commercial development projects pre-, during and post-Brexit and COVID-19 periods.

Travel distance also posed a limitation as many prospective interview candidates were seeking in-person dialogue i.e. on site and while all firms are trading in Ireland, many participants were spread between the Leinster and Munster regions predominantly.

3.11 Data Analysis

Thematic analysis is utilised throughout the research, according to Saunders '*Thematic analysis is a flexible and approachable method of analysing qualitative data that is as agnostic in terms of research philosophy as it is in approach*' (Saunders et al., 2019).

'*Thematic analysis is a data analysis procedure that centres on identification, description, explanation, substantiation and linkages of themes. It is premised on the view that all information is conveyed with meaning and this meaning can be deduced from identifying a central idea or a cluster of ideas that gives it a comprehensive meaning*.' (Kampira, A. Meyer,

J.2019), hence it is aligned closely with qualitative research and this particular research as it offers rich and varied insights.

As noted earlier, inductive research is being undertaken. Thematic analysis is underpinned by a number of important stages as described in Figure 9 below.

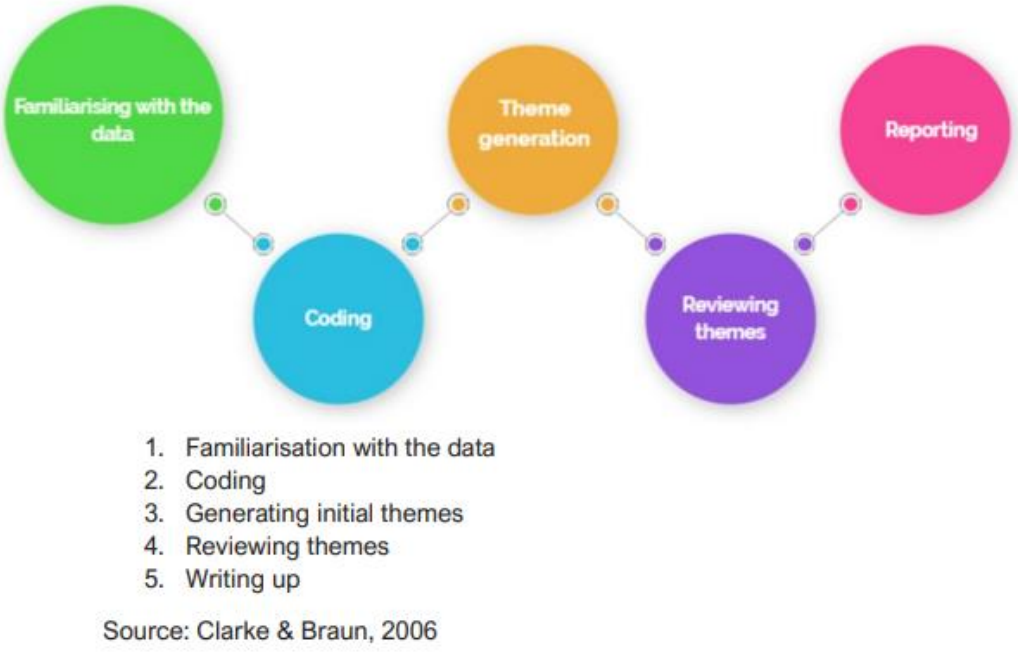

Figure 9: Thematic Analysis Processes (Kampira, A. Meyer, J.2019.P6)

Familiarisation with the data

The recorded interview data was reviewed and transcribed. Following transcription, the interviews were re-evaluated for accuracy of transcription.

Coding & Theme Generation

The data was analysed manually, and recurrent themes were identified throughout the interviews with common subject matter including cost to end-user clients, utilising substitute products and broadening supplier list which all featured heavily i.e. noted in more than 70% of

interviews. The common themes identified were as follows throughout the ten interviews conducted:

Theme
Difficulty sourcing marble due to Brexit and COVID 19 - Primary Theme
Impact on Construction Programmes - Primary Theme
Utilising different material
Broaden Supplier List for sourcing of marble
Cost increased absorbed by the client
Longer lead-in times for Marble
Transportation difficulties by sea
Additional procurement specialists
War in Ukraine
Fuel and labour costs increased
Return to work after COVID-19 posed challenges
Sourcing Marble in Ireland
Government support needed for Irish Quarries
Additional taxes due to Brexit and Rules of origin
Margin erosion due to Brexit and Covid 19 Pandemic
Italian quarries heavily affected
Stockpiling Marble
Forward planning needed to source marble

All participants noted that Brexit and COVID-19 had a negative effect on logistics in the sourcing of marble for the luxury commercial development sector in Ireland. However, opportunities did present themselves within the volatile market including a drive for many tier-three contractors to increase their supplier base across several countries with a view to overcome the circumstantial issues and a desire to decrease dependency on the UK due to Brexit complexities also featured heavily. The themes noted throughout the interviews include the problems and subsequent solutions to improve the situation at hand. The interview questions probed solutions i.e., the need for procurement specialists and recruiting for these roles within the firms.

3.12 Finding from the Data Analysis

The central aim of the research is to review the impact of Brexit and the COVID-19 pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically on tier-three construction firms. As noted earlier, interviews were conducted either in person or through a video conferencing platform such as Microsoft Teams or Zoom and all were recorded. Each participant was aware that the interview was being recorded and signed a consent sheet prior to the commencement of the interview being undertaken. Thematic analysis was performed, analysed manually and transcribed with recurrent themes identified. The prevailing themes observed throughout the set of interviews will be examined in further detail below.

3.13 Difficulty sourcing marble due to Brexit & COVID-19

The difficulty in sourcing marble due to Brexit and COVID-19 was a recurrent factor identified throughout all interviews, along with the uncertainty of market conditions and general market volatility brought about due to these two events. The emerging theme and consensus from the participants was that Brexit and COVID-19 had a decidedly negative effect on the sourcing of

marble for the luxury commercial development sector for tier-three construction firms in Ireland.

'It became very tricky during Covid I suppose with the shipping side of things cause most of the marble we bring in is from overseas so ya during Covid it was extremely complicated, a lot of deliveries coming in that would have been captured and held in port'.

'There were definitely restrictions on getting material from anywhere in the country, in Ireland or abroad because of the restrictions on the movements of vehicles and people and that and it left us with to having to look around as close as we could in the country here to source it off the Quarries that were open'.

'We had difficulty in sourcing the product, we had to use different avenues, Italy, Spain etc'.

3.14 Impact on Construction Programmes

The COVID-19 pandemic in particular was noted as impacting construction programmes to varying lengths.

'Let's say a project that would last 12 weeks would probably on an impact on particular items like stone, marble that would have possible 3-4 week delay certain to circumstances. Not all but in certain ones, in the peak of when we returned to work from Covid it had a major major impact on programme, hugely impacted'.

'Yeah, the program would have definitely been affected, the programs were really shot, gone at that stage, your supply chain sort of dried up so definitely programs were affected'.

'A lot of our programs were extended probably 6-9 months'.

3.15 Broaden Supplier List for sourcing marble.

Many participants noted prior to COVID-19 they had a limited network of suppliers for the sourcing of marble and much of the product was transported through the UK. With the onset of Brexit combined with the subsequent commencement of the COVID-19 pandemic tier-three firms were pushed to broaden their supplier base.

'Yeah I think we had to go source alternative suppliers for materials so we kind of broadened our supplier list in terms of those who provide marble'.

3.16 Cost increases absorbed by the client.

This theme featured heavily throughout; the lack of marble available brought about cost increases which were absorbed by the end-use client.

'I suppose it's very hard to go to a client and say that we need to look for extras for these'.

'Generally speaking, it was the client that lost out, the cost was inevitably passed on to the client or the end user'.

'It has hindered us due to having to pass on extra costs to clients'.

3.17 Utilising different material (typically less expensive stone as an alternative)

This was a prevalent theme throughout the interviews. The impact of quarries being shut with alternative rock being sourced was noted in a number of interviews.

'We probably have to look to source additional materials'.

'If we hadn't got marble, we would use a substitute that they are happy with, the client was happy with because they understood the implications of Covid and same as Brexit as well'.

'We availed of alternatives such as Corian'.

3.18 Additional Procurement Specialists

As a fallout from Brexit and COVID-19, many participants noted the importance of procurement specialists to ensure more competitive pricing and a wider range of suppliers. Many of the participants noted employing procurement specialists and buyers were hired to mitigate against impact of future pandemics and crises in the markets.

'Well, we brought in a second procurement manager into the business and that has really probably helped, again widening our reach and getting more accessible providers in the marketplace and to ourselves, mainly in the Irish market. So, it pushed us to have again more of a reach for a business perspective to suppliers and Brokers'.

'We have since brought in two new purchasing people into our company here to look at sourcing materials, not just marble but other types of materials as well because we find a lot of time was wasted, not wasted but not efficiently used after Covid because we weren't too sure where to go, what to do. These purchasers are people we brought in know where to go, know where to look for certain materials.

'There is now more than ever a need for us to have our procurement manager in the place in the company, possibly even two procurement managers in place. There is more dealings with the logistics around getting the marble over from the Countries now such as Dubai, again Middle East areas'.

3.19 Government support needed for Irish Quarries

It was noted in some interviews the need for Irish Governmental intervention for more marble to be quarried in Ireland, and a sub-theme arising from this is the requirement for support for

indigenous Irish Quarries. The cost of doing business in Ireland and 'buying Irish' was also an impeding factor.

'It would be much easier if we had not to go outside the country for a start because you are probably more user friendly, less pollution and less carbon footprint created source it local so. Sometimes you just can't, sometimes you can but if probably more support for local suppliers /quarries it might be the answer in the long run. I know costs are quite high here at the moment for both labour and material, housing doesn't make it the most attractive country to do scaling up like that so to export might not be the way but not right now but maybe getting ready for the future it might be'.

'You would always have to question you know, could the government do any more in these situations? I mean should the quarrying of marble and other products similar to marble be pushed in Ireland to see if we can quarry them out'.

3.20 Reviewing Themes & Reporting

The themes generated were reviewed to ensure relevancy to the data they are based on. A thorough cross-reference check entailing reviewing and critiquing the data proved useful to ensure all relevant data was encapsulated on the focal points generated.

Finally, reporting the findings which will be covered in chapter four under Findings, Analysis and Discussions.

CHAPTER FOUR

Findings, Analysis and Discussion

4.0. Introduction

This chapter specifies the findings of the study, the answers of which were sculpted by the methodology and direction the research took i.e. qualitative data collection, thematic analysis, semi structured interviews etc. The research had an overarching aim to review the impact of Brexit and the COVID-19 pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically on tier-three construction firms. The findings uncovered in the primary research within the literature available are to address the research objectives.

The literature analysed will be utilised to expand on the themes identified in the data analysis which will equate to a more rounded rich analysis dataset.

To recap the research objectives of the study are as follows:

- To identify common themes throughout the interviews on the impact of the COVID-19 pandemic and Brexit on logistics in the sourcing of marble for the luxury commercial development sector in Ireland specifically on tier-three construction firms
- To identify any potential correlation between both constructs, Brexit & COVID-19, in terms of potential impacts in relation to transportation, availability, challenges and opportunities, strategies designed to mitigate risk, with a view to future supply chain.
- Evaluate any industry obstacles identified in the interviews which have not been seen in published research, with a view to provide aid in future research conducted within the Irish Market.

A number of sub-questions were to be answered including:

- How did your firm and the tier three contractors in general navigate the trade, and documentation complexities around Brexit for the sourcing of Marble as material?
- What changes could be implemented to increase marble production in Ireland rather than being dependant on EU, Asian and Middle Eastern Countries?
- What are the lessons learned from Covid 19 and Brexit for tier three contractors that could be beneficial for future unexpected events of crises in terms of marble supply in the future in an Irish context?

The findings are also shaped by the interview questions noted earlier in the research paper to form a rich data tool.

4.1 Impact of Brexit

From the research and subsequent interviews undertaken, Brexit has had a significant impact on the Irish Construction Industry as a whole, complexities in terms of additional taxation on goods, rules of origin issues, increased documentation and regulatory paperwork for tier-three contractors all identified through the research. As documented in many of the interviews and seen throughout the literature, the industry was in a state of flux due to Brexit being an unprecedented event, much of the learnings and solutions were found and implemented when Brexit was formally ratified and came into law '*The construction industry has always been reactive but with respect to Brexit, this approach seems the only option as nobody knows what's going on, and we'll probably deal with it when it comes rather than do some sort of planning for it*.' (Scott, 2014).

In trying to understand the impact Brexit had on logistics specifically in the sourcing of marble on tier-three construction firms in Ireland, the industry as a whole found innovative solutions to circumnavigate the unchartered waters including:

'*Redefine sourcing strategy. Many companies might need to explore onshoring opportunities and develop local suppliers—or the local footprints of international suppliers—to ensure reliable supply at a competitive cost even in a scenario of ongoing uncertainty over European trade. Companies can also hedge currency and commodity-price risks and modify contract structures to protect against short- and medium-term risks.'* (Gysegom, W et al, McKinsey & Company, 2019)

This theme was highlighted throughout the interviews in buying local or more governmental support for indigenous Irish quarries.

The research indicated supply chain for materials including marble was affected, a joint report by PWC and Construction Industry Federation noted '*45% of respondents say that their supply chain will be impacted and 37% have no customs experience*', (Parlon et al., 2019), but further research indicates learnings following the introduction of Brexit as firms adapted. These factors were felt on niche products in particular which includes marble. '*The United Kingdom is known to be one of the biggest importers of natural stones including marble, granite and others. As the UK and European Union decided to part their ways and closed the book on almost half a century of close negotiations on Jan 31. Due to which various industry sectors got impacted and the natural stone industry is no exception'*, (Admin, 2021).

The increased cost of sea transportation was also evident throughout the interviews in the shipping of marble with research from the BBC noting '*Haulage firms estimate that one pallet of goods, which previously would have cost around £100 to ship, now costs an extra £50 to £350 for all the new admin*.' (Vardy, 2021).

Cash flow difficulties and tighter margins for contractors feature heavily in the literature '*The contactor usually bears the cost of any increased material costs in standard JCT contracts and knowing the cost of materials is vital to be able to tender competitively for contracts, so all the unknowns' surrounding charges, taxes, quotas and tariffs represents a significant challenge.*' (Irwinmitchell Report, 2020) Due to the size and margins tier-three contractors are operating on, compared to a tier-one or -two contractor, this issue is more acute.

From the research, the market volatility once Brexit was introduced was only the start of market upheavals with the COVID-19 pandemic being declared only a few short months later '*The World Health Organization (WHO) on March 11, 2020, has declared the novel coronavirus (COVID-19) outbreak a global pandemic*' (Cucinotta, D., Vanelli, M., 2020)

Ireland as an Island Nation is naturally heavily dependent on imports '*The value of Irish exports and imports hit a new record high last year, according to the Central Statistics Office, despite the challenging economic backdrop total imports were worth €140 billion, an increase of €36 billion or 35%.*' (Goodbody, W. 2023) The demand for locally sourced stone from Ireland to avoid the complexity brought about by Brexit was well documented, however the strain of stone is limited in Ireland '*There are hardly any truly metamorphic marbles in the British Isles, although Ireland does produce some – Connemara Marble and Armagh Marble'* (Mineral Products Association, 2023)

Most of the Participants interviewed showed a desire to innovate and were agile to changing market conditions when focusing on Brexit including due diligence in sourcing a product, transport routes with a view to avoiding mainland UK.

4.2 Impact of The Covid 19 Pandemic

The Literature overall and interviews undertaken showcase COVID-19 as having a profound impact on the sourcing of all construction material particularly bespoke stone such as marble on tier-three construction firms.

Prior to Brexit and COVID-19 the sourcing of marble for projects was a well-established process. With the onset of COVID-19, countries around the world implemented strict lockdown measures and travel restrictions to control the spread of the virus, this was noted in numerous interviews with lockdowns at any one-time differing Country to Country to further complication supply chains.

Disruptions in the supply chain was felt acutely in construction and the marble industry with many of the quarries being located in countries severely impacted by COVID-19 including Italy '*Italy was the first country in the western world to be affected by the COVID-19 pandemic, arguably among the worst-affected ones, counting 12 million cases and 150 thousand deaths two years since the first case*', (Beccia, F. et al., 2022). With quarries shut down temporarily, a global shortage of raw material and finished marble products was felt in the sector. This scarcity made it challenging, as noted in the interviews the return to work in Ireland and ramping back up to required levels was difficult. The mobilisation and de-mobilisation due to lockdowns caused issues with the supply chain of marble and available workforce.

As the supply chain started to recover, the literature indicates delays in shipping and transportation was a common occurrence. '*Shipping suffered a series of disruptions as coronavirus spread around the world: port authorities have forced some ships to observe 14-day quarantine periods at anchor before entering some ports*.' (Wright, R, 2020). The restrictions on international travel and the reduced flight schedules affected the timely delivery

of marble from overseas suppliers, consequently, programs were extended which increased the cost burden on the end-user clients.

The literature also focused on the adaptability of the industry including shifting sourcing strategies. One of the most prevalent themes through the interviews was pre-Brexit and COVID-19 tier-three contractors being heavily reliant on the UK and certain suppliers but due to market conditions, many are now sourcing in the Middle East.

Trade Barriers between the UK and the EU encouraged firms to explore alternative suppliers outside the EU as noted in interviews '*We had to look at Asia , looked at India and Asia and we looked at the Middle East so we are not buying any marble through the UK anymore'* The shift in strategy aimed to reduce the risks associated with global supply chain disruptions and mitigate the impact of future crises.

As the pandemic worsened, tier-three construction firms were dealing with site closures, '*The government announced new measures which took effect at midnight on 28 March 2020 until 18 May 2020 which requires all people to stay at home except for certain limited circumstances. This has effectively closed building sites in Ireland'* (Masuda, K, 2020)

With quarries closed both nationally and internationally, the inability to conduct in person inspections, firms had to rely on virtual inspections.

The literature and the interviews note the impact on project timelines/programmes. The literature paints a picture of a cascading effect on the timelines of projects due to lockdowns or projects being delayed in starting which hindered cashflow of tier-three construction firms. '*a report which includes research conducted among 375 construction owners, main contractors and subcontractors in the UK and Ireland. The research found that 53% of main contractors and 43% of subcontractors have experienced delayed starts to projects in the past*

six months due to COVID-19.' (Fennell, A. 2021) With programmes extended or projects pulled '*contractors operating under the RIAI contracts will have been looking to determine whether the outbreak constitutes a force majeure event. A force majeure event would typically provide contractual relief to the contractor. At Clause 30 of the standard RIAI contract, force majeure is a delay event which would entitle a contractor to an extension of time only and a corresponding release from any liability for liquidated damages for the period of delay caused by the outbreak, provided appropriate notification of the delay is given*.', (Mason Hayes and Curran., 2020). Naturally with delays in sourcing marble with the macro-economic circumstances which the tier-three contractors were operating in, financial pressures were felt which ultimately fell on the end user client which was a strong theme identified throughout the interviews.

The pace of the COVID-19 impact was immediate with lockdowns announced '*COVID-19's impact was immediate — it was as if the tap was turned off for parts of the business, and supplies to site simply stopped. Within a three- to four-day period, remote working was the norm, with some projects having to be designed from remote locations, forcing contractors to look for new ways of working to ensure productivity*', (McLennan, 2020).

Customer preferences also shifted, there was a growing focus on health and hygiene considerations in design, demand for essential materials/antimicrobial surfaces overtook luxury goods such as marble. '*Governments, companies and individuals continue to invest vast amounts of time and money in deep-cleaning efforts. By the end of 2020, global sales of surface disinfectant totalled US$4.5 billion, a jump of more than 30% over the previous year',* (Lewis, 2021).

Despite the challenges COVID-19 brought, the industry remains resilient and showed adaptability during the pandemic. By widening supply chain and increasing supplier base, this

helped mitigate the risks associated with international supply chain disruptions. Procurement specialists and buyers as discussed in interviews are in demand due to these events. The COVID-19 pandemic has had a significant impact on the sourcing of marble for luxury commercial development projects on tier-three construction firms, with disruptions in global supply chains, transportation difficulties, the need to shift sourcing strategies have all posed substantial challenges. However, through adaptability tier-three construction firms have navigated these challenges and continue to strive for success in this evolving landscape.

4.3 Correlation between both constructs Brexit & COVID-19

The combination of Brexit and the COVID-19 Pandemic has created a complex and interconnected set of challenges for tier-three construction firms in the luxury commercial development sector.

Firstly, the literature describes the temporal proximity in which both constructs occurred and as such, prevented the market from making a recovery. Brexit, as discussed previously, is the process by which the United Kingdom left the European Union and itself has had far-reaching consequences for trade and business relationships. The COVID-19 pandemic, on the other hand, struck the world in early 2020, causing unprecedented disruptions to global supply chains and economies.

Both constructs had dysergy and effects. Trade uncertainties surrounding the Brexit negotiations and eventual trade agreement between the UK and EU created a climate of unpredictability for businesses including the construction industry and by extension tier-three construction firms. '*The findings show that the ongoing Brexit uncertainty has already reduced UK trade in goods and services before any actual policy changes took place. This disintegration is present in UK trade, with countries potentially affected by trade policy changes including the EU and other UK preferential trade partners. Firms in these countries*

faced increased trade policy uncertainty, leading to depressed export investments.' (Handley, K et al., 2021).

With marble being predominantly imported into Ireland, the trade policies, tariffs, rule of origin issues, and custom procedures made it challenging for these firms to source and transport marble. The issues of Brexit lingered, and further complications arose when COVID-19 was declared a pandemic leading to multiple global lockdowns.

Both constructs had an impact on disruptions on global supply chains. As noted previously, lockdowns, travel restrictions and temporary closures on quarries impacted the availability of raw materials and finished marble products. Tier-three construction companies faced challenges in sourcing marble due to disruptions which were a joint effect of Brexit and COVID-19 '*The construction industry currently faces growing materials and labour shortages, rising costs and delays. But while Brexit has exacerbated problems in the UK, factors such as increased demand, the impact of COVID-19 and logistics issues are having a global impact*.', (Ward, B 2022).

Brexit and the onset of the pandemic compelled tier-three construction firms to reassess their supplier relationships and diversify their sourcing strategies which was noted as a key theme in the interviews, *'widening and broadening our supply chain base as we notice Italian quarries are not, they are not trading at full capacity, so we have gone to other places like the Middle East and Turkey for example'.* The shift in supplier relationships as seen in the interviews required firms to establish new connections, overcome language barriers with merchants, negotiate new contracts and adapt to differing pricing structures and payment terms.

The correlation of both constructs resulted in significant currency fluctuations, particularly on the British Pound. The turbulent political reign due to Brexit and the economic outlook of the UK coupled with a pandemic lead to a weak pound sterling and volatility in the exchange rates.

The following quote was reported on the website IG.com, from period February-April 2020 as the pandemic hit the UK and Europe: '*The pound weakened against the dollar from 25 February to 1 April, represented by a 4.12% decline in value for the GBP/USD pair. The effects of coronavirus on the markets were particularly damaging during this period, so it might've been expected that investors poured their money into the dollar as a safe haven. Interestingly, the pound also weakened against the euro during the same time frame – with the GBP/EUR pair falling 4.69%. This is an indication that investor confidence in GBP was much lower than it was for EUR as the initial onset of the coronavirus began to sting the markets*.', (The value of the pound since Brexit 2021)

The currency fluctuations added a layer of financial complexity to the sourcing process of marble for tier-three construction firms impacting of project budgets negatively.

Ireland relies heavily on the UK for importing and exporting products and while this may have lessened due to Brexit, the UK remains a key trading player as noted on a 2021 Department of Enterprise, Trade and Employment report: '*while the UK remains our largest export market, it contracted by 3.8% in 2020. The UK now accounts for 29% of total exports, down from 40% 10 years ago but still accounting for €7.51bn now versus €5.5bn at that time'*, (Varadkar, L. 2021).

4.4 Marble Industry in Ireland

The literature has highlighted the importance of quarrying to the Irish economy. Ireland boasts a strong history of quarrying, a 2004 report from the era dubbed 'The Celtic Tiger' noted in a governmental report *'Aggregates are an essential input to the construction industry, which is worth about €20 billion to the Irish economy each year'* (Department of the Environment, Heritage and Local Government, 2004. P4). While general quarrying is an important facet to the economy, the quarrying of marble in particular comprises only a small percentage of this,

official statistics are limited but from the literature, the quarrying of marble in Ireland is limited to certain counties, predominantly Kilkenny and Galway.

The interviews highlight the cost of doing business in Ireland in terms of labour and materials, but there is an appetite to source more marble in Ireland as noted from participants in the interviews: '*It would be much easier if we had not to go outside the country for a start because you are probably more user friendly, less pollution and less carbon footprint created source it local so. Sometimes you just can't, sometimes you can but if probably more support for local suppliers /quarries it might be the answer in the long run. I know costs are quite high here at the moment for both labour and material, housing doesn't make it the most attractive country to do scaling up like that so to export might not be the way but not right now but maybe getting ready for the future it might be'.*

CHAPTER FIVE

5.0 Recommendations

'*The Construction Industry Federation is the Irish construction sector's representative body. We provide a broad range of services that advise companies of all sizes across construction in navigating the political, business, economic and regulatory environment.*' (Construction Industry Federation, 2024) and while the CIF provide lobbying and guidance to all tiers of contractors, it is the researcher's recommendation for a specific lobbying body within the construction industry, incorporated into the CIF or independent, to be formed to represent the views of tier-three contractors. The disparity between tier-three and tier-one contractors in terms of turnover is one example of the differing needs and viewpoints required, one generic body will not encapsulate this equally for all tiers. For example, John Sisk & Son a tier-one contractor at the end of 2022 revenue increased by €250 Million, whereas tier-three contractor's turnover is c1-5% of Sisk ROI turnover (calculations from literature review Bradley, C reference) hence the need for a specific lobbying body.

Figure 10: Top 40 Building Contractors 2023 (Irishconstructionnews, 2024)

The second recommendation is greater state support for quarrying in Ireland, specifically marble. When focusing on Italy, Carrara is an area renowned for marble quarrying *'the Carrara quarries have produced more marble than any other place on Earth. The market as a whole is*

worth over €1 billion ($1.1 billion) and produces 4 million tons of marble every year, with 13,000 people involved.' (Romeo, C. 2019).

The most recent census of the area notes a population of 59,793 (Istituto Nazionale di Statistica Itali, 2024) with the region extending to 71.28km. While the area has rich reservoir of the rock, the sheer size of the region and the output achievable is an impressive feat and one that the Irish Government should take note of. Much of the participants within this research noted a desire for increased state support for the industry, which would in turn provide the potential benefits to the exchequer and revenue generation due to increased state support and the industry being prioritised from policy holders.

The third recommendation is for specific third-level courses applicable through CAO for school leavers and additional learners to specialise in quarrying techniques and provide a clear pathway to employment in the industry. From a high level review no such course exists nor apprenticeship model. With the ongoing shortage of skilled labourers in construction currently, this would provide a direct and intentional route to employment. '*Similar research conducted by the Society of Chartered Surveyors Ireland (SCSI) in Ireland revealed that over 2,000 new job opportunities are expected to be created across the surveying profession in the next four years. However, based on current enrolment numbers, there will only be enough construction and property related surveying graduates to fill just over half of them (52%).*' (Linesight report, 2024).

The shortage of workers may be due to the previous recession-related downturn and losing many skilled tradespeople who emigrated or left the sector: '*Large numbers of construction workers on the ground and construction professionals lost to the industry in the 2009/10 crash who have never returned to the industry. This includes both Irish and International workers who either left to other sectors of the economy or left Ireland to work abroad and many have*

not returned. Not enough new workers coming through the apprentice system over the last 10 years – so we are in catch-up mode. Construction work and roles not seen as being popular or attractive enough to younger workers (and indeed their parents) when compared to other sectors/ careers. (Ward, D. 2022)

Tier-three contractors need to work together towards a shared vision, promote a culture of knowledge and expertise sharing and host conferences to discuss current pressing issues in the industry, the idiom ‘there is strength in numbers’ rings true.

5.1 Conclusion

In conclusion, from reviewing the impact of Brexit and the COVID-19 pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically on tier-three construction firms, several challenges were identified including changes to trade policies brought about due to Brexit, rules of origin issues, tariffs and customs procedures, disruptions in supply chains and COVID-19 lockdowns have all impacted tier-three construction firms. Multiple complexities throughout the time period assessed were observed including difficulties in sourcing the rock, complications in shipping the rock within a predefined timeframe to prevent downstream implications within the construction programme and issues with maintaining margins in such a volatile market. However, through resilience, adaptation and proactive measures, tier-three construction firms have navigated these challenges and continue to strive for success in the evolving landscape of sourcing marble for luxury commercial development projects in Ireland.

BIBILOGRAPHY

Admin (2021) *Impact of brexit on marble imports in the UK, Indian Natural Stone Exporter,Manufacturer,Supplier & Factory*. Available at: https://www.regattaexports.com/impact-of-brexit-on-marble-imports-in-the-uk/ (Accessed: 13 May 2024).

Amin, A.S., Ali Ramdhani, M. and Ramdhani, A. (2014) *(PDF) writing a literature review research paper: A step-by-step approach, https://www.researchgate.net/publication/311735510_Writing_a_Literature_Review_Research_Paper_A_step-by-step_approach*. Available at: https://www.researchgate.net/publication/311735510_Writing_a_Literature_Review_Research_Paper_A_step-by-step_approach (Accessed: 14 May 2024).

Archi Hives. (2024) *High-End Materials: A Look at Luxurious Finishes in Office Interiors.* Available at https://www.linkedin.com/pulse/high-end-materials-look-luxurious-finishes-office-interiors-qtj4c (Accessed: 18 May 2024).

Arshed, N. and Dansen, M. (2015) '*The Literature Review', Research Methods for Business and Management, p. 32. doi:10.23912/978-1-910158-51-7-2790*. (Accessed: 15 May 2024).

BBC News (2020) *Coronavirus: Italy imposes regional lockdown as Europe battles surges.* Available at: https://www.bbc.com/news/world-europe-54839429. (Accessed: 13 May 2024).

Beccia, F. et al. (2022) *Narrative review of the COVID-19 pandemic's first two years in Italy', International Journal of Environmental Research and Public Health, 19(23), p. 15443. doi:10.3390/ijerph192315443.* (Accessed: 15 May 2024).

Bhardwaj, P. (2019) 'Types of sampling in research', *Journal of the Practice of Cardiovascular Sciences, 5(3), p. 157. doi:10.4103/jpcs.jpcs_62_19* (Accessed: 15 May 2024).

Bradley, C. (2020) *Pros and cons of working for Tier 1, Tier 2 and Tier 3 builders.* Available at https://www.linkedin.com/pulse/pros-cons-working-tier-1-2-3-builders-carlie-bradley. (Accessed: 18 May 2024).

Brooks, T. et al. (2018) *The impact of Brexit on cross border trade by the construction ..., https://pureadmin.qub.ac.uk/ws/portalfiles/portal/156370289/The_impact_of_Brexit_on_cross_border_trade_by_the_construction_sector_in_Ireland_an_exploratory_study_Brooks_et_al_2018_.pdf*. Available at: https://pure.qub.ac.uk/portal/files/156370289/the_impact_of_brexit_on_cross_border_trade_by_the_construction_sector_in_ireland_an_exploratory_study_brooks_et_al_2018_.pdf (Accessed: 14 May 2024).

Bussetto, L., Wick, W., Gumbinger, C. (2020) *How to use and assess qualitative research methods. Neurological Research and Practice volume 2, Article number: 14 (2020)* Available at: https://neurolrespract.biomedcentral.com/articles/10.1186/s42466-020-00059-z (Accessed: 18 May 2024)

CIF (2024) About CIF Available at https://cif.ie/about/ (Accessed: 18 May 2024).

Claringbold, K., Flegg, A., Magee, R., Vonhof, J. (1994) *DIRECTORY OF ACTIVE QUARRIES, PITS, AND MINES IN IRELAND, MINERALS SECTION Geological Survey of Ireland, Report series.* Available at: https://irishriverproject.com/wp-content/uploads/2022/11/1994_Quarry_Directory.pdf (Accessed: 15 May 2024).

Collis and Hussey (2013) Blog 132-Research Onion: A Systematic Approach to Designing Research Methodology. Available at: https://www.aesanetwork.org/research-onion-a-systematic-approach-to-designing-research-methodology/ (Accessed: 18 May 2024)

Coulter, C. and Coleman, S. (2009) *The end of Irish history?: Reflections on the celtic tiger on JSTOR, www.jstor.org*. Available at: https://www.jstor.org/stable/j.ctt155j8cz (Accessed: 14 May 2024).

CSO (2022) *Ireland's UN SDGs - Goal 17 Partnerships for the Goals 2022.* Available at: https://www.cso.ie/en/releasesandpublications/ep/p-sdg17/irelandsunsdgs-goal17partnershipsforthegoals2022/trade/#:~:text=Data%20published%20by%20the%20CSO,imported%20almost%20%E2%82%AC104%20billion (Accessed: 18 May 2024).

Cucinotta D, Vanelli M. (2020) *WHO Declares COVID-19 a Pandemic. Acta Biomed. 2020 Mar 19;91(1):157-160. doi: 10.23750/abm.v91i1.9397. PMID: 32191675; PMCID: PMC7569573.*Available at: https://pubmed.ncbi.nlm.nih.gov/32191675/ (Accessed: 18 May 2024).

Dale, M. (2021) *Brexit 'rule of origin' confusion leads UK businesses to suspend sales to EU consumers- EU consumers may source goods elsewhere if subject to import duty*. Available at: https://www.uhy-uk.com/insights/brexit-rule-origin-confusion-leads-uk-businesses-suspend-sales-eu-consumers (Accessed: 18 May 2024).

Dargan, A. (2021) *A researched forecast into rising building material costs: 2022-2024, Construction Information Services (CIS)*. Available at: https://www.cisireland.com/a-researched-forecast-into-rising-building-material-costs-2022-2024/ (Accessed: 13 May 2024).

Department of the Environment, Heritage and Local Government (2004) *Quarries and Ancillary Activities, Guidelines for Planning Authorities.* Available at: https://dokumen.tips/documents/quarries-and-ancillary-activities-guidelines-for-planning-and-ancillary-activities.html?page=1 (Accessed: 15 May 2024).

Department of Foreign Affairs (2023) *Brexit and Ireland* Available at: https://www.gov.ie/en/campaigns/7feb5-brexit-and-ireland/#:~:text=The%20EU%2DUK%20Trade%20and,a%20number%20of%20important%20areas. (Accessed: 18 May 2024).

Dissanayake, E. (2023) *(PDF) research onion: A systematic approach for designing research methodology. part One, https://www.researchgate.net/profile/E-V-A-Dissanayake*. Available at https://www.researchgate.net/publication/368874144_Research_Onion_A_Systematic_Approach_for_Designing_Research_Methodology_Part_One (Accessed: 14 May 2024).

DKIT. (2024) *Write a literature review: What is a literature review? Reviewing the Literature with Literature Reviews...* Available at https://dkit.ie.libguides.com/literaturereview (Accessed: 18 May 2024).

Engineers Ireland. (2020) Quarter of Irish and UK building contractors report cancellations or suspensions due to pandemic – report. Available at: https://www.engineersireland.ie/Students/News-Insights/Resource-centre/Engineers-TV/quarter-of-irish-and-uk-building-contractors-report-cancellations-or-suspensions160due-to-pandemic160-report (Accessed: 15 May 2024).

European Commission. (2019) MINLEX - Italy Country Report. Available at: https://rmis.jrc.ec.europa.eu/uploads/legislation/MINLEX_CountryReport_IT.pdf (Accessed: 18 May 2024).

European Medicines Agency. (2023) COVID-19 *Lessons learned. Joint report on the response to the Public Health Emergency.* Available at: https://www.ema.europa.eu/en/documents/report/covid-19-lessons-learned-joint-report-response-public-health-emergency_en.pdf (Accessed: 18 May 2024).

Eur- Lex (2021) - 22021A0430(01). Available at: https://eur-lex.europa.eu/legal content/EN/TXT/?uri=uriserv%3AOJ.L_.2021.149.01.0010.01.ENG&amp%3Btoc=OJ%3AL%3A2021%3A149%3ATOC (Accessed: 13 May 2024).

Eustace, D. (2020) *Construction contracts - covid 19 impacts and considerations, www.dilloneustace.com/.* Available at: https://www.dilloneustace.com/uploads/files/Covid-19_Construction_Contracts_Impacts_and_Considerations.pdf (Accessed: 14 May 2024).

Fennell, A. (2021) *The Role Construction Plays in Rebuilding the Irish Economy from the COVID-19 Pandemic.* Available at https://www.autodesk.com/blogs/construction/construction-irish-economy-covid-19/ (Accessed: 18 May 2024).

Fitzgibbon, G.H. of G.C.G. (2022) *Brexit one year on: What's the effect on UK construction?, Marsh*. Available at: https://www.marsh.com/uk/industries/construction/insights/brexit-one-year-on-what-is-the-effect-on-uk-construction.html (Accessed: 14 May 2024).

Francis, C. (2020) *Brexit and the threat of Supply Chain Failure, Pinsent Masons*. Available at: https://www.pinsentmasons.com/out-law/analysis/brexit-and-the-threat-of-supply-chain-failure (Accessed: 13 May 2024).

Gamil, Y. and Alhagar, A. (2020) *The impact of pandemic crisis on the survival of construction industry: A case of covid-19', Mediterranean Journal of Social Sciences, 11(4), pp. 122–123. doi:10.36941/mjss-2020-0047*. (Accessed 15 May 2024)

Goldkuhl, G. (2012) *Pragmatismvsinterpretivism in Qualitative Information Systems Research', European Journal of Information Systems, 21(2), pp. 135–146. doi:10.1057/ejis.2011.54.* (Accessed 15 May 2024)

Goodbody, W. (2023) *RTE Irish exports and imports hit record highs in 2022*. Available at https://www.rte.ie/news/business/2023/0215/1356822-irish-exports-and-imports-hit-record-highs-in-2022/ (Accessed 18 May 2024)

Gostin, L.O. and Gronvall, G.K. (2023) *The origins of covid-19 — why it matters (and why it doesn't)', New England Journal of Medicine, 388(25), pp. 2305–2308. doi:10.1056/nejmp2305081*. (Accessed 15 May 2024)

Government of Ireland (2022*) Project Ireland 2040 BUILD 2022: Construction Sector Performance and Capacity* Available at: https://www.gov.ie/pdf/?file=https://assets.gov.ie/229941/676ef592-29b8-4dd0-84b3-bfb0aa375ec7.pdf#page=null (Accessed 18 May 2024)

Grandi, S. (2019) *MINLEX - Italy Country Report, https://rmis.jrc.ec.europa.eu/uploads/legislation/MINLEX_CountryReport_IT.pdf*. Available at: https://rmis.jrc.ec.europa.eu/uploads/legislation/MINLEX_CountryReport_IT.pdf (Accessed: 14 May 2024).

Gysegom, W., Sabah, R., Schlichter, M., Schmitz., Soubien, F. (2019) McKinsey & Company *Brexit: The bigger picture—Rethinking supply chains in a time of uncertainty.* Available at *https://www.mckinsey.com/featured-insights/europe/brexit-the-bigger-picture-rethinking-supply-chains-in-a-time-of-uncertainty#/* (Accessed: 18 May 2024)

Handley, K., Limao, N., Graziano.(2021) *VOX EU Brexit uncertainty and trade disintegration in Europe and beyond.* Available at https://cepr.org/voxeu/columns/brexit-uncertainty-and-trade-disintegration-europe-and beyond#:~:text=The%20findings%20show%20that%20the,other%20UK%20preferential%20trade%20partners. (Accessed: 18 May 2024)

Hennigs, N. *et al.* (2022) *The concept of luxury: A global phenomenon with local implications, The European Financial Review*. Available at: https://www.europeanfinancialreview.com/the-concept-of-luxury-a-global-phenomenon-with-local-implications/ (Accessed: 13 May 2024).

HM Revenue (2023) *The growth of the stone market in the UK, Stone Specialist*. Available at: https://www.stonespecialist.com/growth-stone-market-uk (Accessed: 14 May 2024).

Husien, I.A., Borisovich, Z. and Naji, A.A. (2021) '*Covid-19: Key global impacts on the construction industry and proposed coping strategies', E3S Web of Conferences, 263, p. 05056. doi:10.1051/e3sconf/202126305056.* (Accessed: 15 May 2024)

IG (2021) *The value of the pound since Brexit*. Available at: https://www.ig.com/uk/financial-events/brexit/value-of-the-pound-since-brexit (Accessed: 13 May 2024).

Irishconstructionnews (2023*) Irish Construction News Top 40 Building Contractors 2023,* Available at: https://constructionnews.ie/top-40-contractors/ (Accessed: 18 May 2024)

Irwinmitchell (2020) *Brexit Brings Increased Risks For Construction Contracting A New Report Reveals- A Report By NFB And Irwin Mitchell Aims To Help Sector Navigate 'One Of The Most Testing Periods In Modern History'* Available at https://www.irwinmitchell.com/news-and-insights/newsandmedia/2020/november/brexit-brings-increased-risks-for-construction-contracting-a-new-report-reveals (Accessed: 18 May 2024)

Kampira, A. and Meyer, J. (2021) *(PDF) A brief introduction to thematic analysis, https://www.researchgate.net/publication/351051073_A_Brief_Introduction_to_Thematic_Analysis*. Available at: https://www.researchgate.net/publication/351051073_A_Brief_Introduction_to_Thematic_Analysis (Accessed: 14 May 2024).

Kelly, M. (2009) *The Irish Credit Bubble - University College dublin, UCD.ie*. Available at: https://www.ucd.ie/geary/static/publications/workingpapers/gearywp200950.pdf (Accessed: 14 May 2024).

Lewis, D. (2021) *Covid-19 rarely spreads through surfaces. so why are we still deep cleaning?, Nature News*. Available at: https://www.nature.com/articles/d41586-021-00251-4 (Accessed: 13 May 2024).

Linesight (2024) *UK and Irish construction skills shortage*. Available at https://www.linesight.com/insights/uk-and-irish-construction-skills-shortage/ (Accessed: 18 May 2024).

López, M.Á. (2024) *The United Kingdom: Fact sheets on the European Union: European Parliament, Fact Sheets on the European Union | European Parliament*. Available at: https://www.europarl.europa.eu/factsheets/en/sheet/216/the-united-kingdom (Accessed: 13 May 2024).

Marchant, R. (2021) *An often overlooked area- own goods movements/ movements of goods around a corporate group post Brexit, Forbes*. Available at: https://www.forbes.com/sites/robertmarchant/2021/11/01/an-often-overlooked-areaown-goods-movements-movements-of-goods-around-a-corporate-group-post-brexit/ (Accessed: 13 May 2024).

Mason, Hayes and Curran (2020) *Projects on lockdown: Impact of covid-19 restrictions, https://www.mhc.ie/latest/insights/projects-on-lockdown-impact-of-covid-19-restrictions*. Available at: https://www.mhc.ie/latest/insights/projects-on-lockdown-impact-of-covid-19-restrictions (Accessed: 13 May 2024).

Masuda, K. (2020) *BUILDING LAW AND REGULATION IN IRELAND DURING COVID-19.* Available at https://cms.law/en/int/expert-guides/cms-expert-guide-to-covid-19-impact-on-construction-industry/ireland (Accessed: 18 May 2024).

Mathers, N., Fox, N. and Hunn, A. (2000) *(PDF) using interviews in a research project, https://www.researchgate.net/publication/253117832_Using_Interviews_in_a_Research_Project*. Available at: https://www.researchgate.net/publication/253117832_Using_Interviews_in_a_Research_Project (Accessed: 14 May 2024).

Mattock, C. (2014) *Where is marble found & where does it come from? - ultimate guide, Surrey Marble Granite*. Available at: https://www.surreymarbleandgranite.co.uk/where-does-marble-come-from/ (Accessed: 13 May 2024).

McLennan, M. (2020) *Five ways covid-19 has impacted construction companies, Marsh*. Available at: https://www.marsh.com/en/industries/construction/insights/five-ways-covid-19-has-impacted-construction-companies.html (Accessed: 13 May 2024).

Miles, A, D. (2017*) Research Methods and Strategies Workshop: A Taxonomy of Research Gaps: Identifying and Defining the Seven Research Gaps.* Available at: https://www.researchgate.net/publication/319244623_ARTICLE_Research_Methods_and_Strategies_Workshop_A_Taxonomy_of_Research_Gaps_Identifying_and_Defining_the_Seven_Research_Gaps (Accessed: 18 May 2024).

Mineral Products Association (2023) *The growth of the stone market in the UK*. Available at https://www.stonespecialist.com/growth-stone-market-uk https://www.stonespecialist.com/sites/default/files/news/MPA-Dimension-_Stone_2015.pdf (Accessed: 18 May 2024).

Mishra, B, S., Alok, S. (2017) *HANDBOOK OF RESEARCH METHODOLOGY: A COMPENDIUM FOR SCHOLARS & RESEARCHERS.* Available at https://www.researchgate.net/publication/319207471_HANDBOOK_OF_RESEARCH_METHODOLOGY (Accessed: 18 May 2024).

Mulligan, J. (2024) Irish Independent *Archer Capital confirmed as buyer of Dublin's landmark Shelbourne Hotel.* Available at https://www.independent.ie/business/irish/archer-capital-confirmed-as-buyer-of-dublins-landmark-shelbourne-hotel/a176824287.html#:~:text=Last%20year%2C%20Kennedy%20Wilson%20hiked,McNamara%20and%20Jerry%20O'Reilly (Accessed: 18 May 2024).

Nova South Eastern University. (2024) *Developing your research question.* Available at: https://app.nova.edu/toolbox/Dissertation/Handouts/Developing%20Your%20Research%20Questions.pdf (Accessed: 15 May 2024).

O'Gorman, K. and MacIntosh, R. (2015) *Research Methods for Business & Management, ReserachGate.com.* Available at: https://www.researchgate.net/publication/291345630_The_Literature_Review (Accessed: 13 May 2024).

Oyebamigi, M. (2019) *DBS An Analysis of the Quality Management Practices Used in the Construction Industry and Their Effectiveness: Case Study on Irish Construction Companies.* Available at DBS Student Portal (Accessed: 18 May 2024).

Paine, M. (2020) *The impacts of coronavirus on the natural stone industry, Historic England*. Available at: https://historicengland.org.uk/whats-new/debate/recent/impact-of-covid-on-heritage/covid-19-impact-on-natural-stone-industry/ (Accessed: 13 May 2024).

Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood *K. Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. Adm Policy Ment Health. (2015) Sep;42(5):533-44. doi: 10.1007/s10488-013-0528-y. PMID: 24193818; PMCID: PMC4012002*.(Accessed: 18 May 2024)

Parlon, T. *et al.* (2019) *CIF, https://constructionnews.ie/wp-content/uploads/2019/03/CIF-Brexit-report_February-2019-pwc.pdf.* Available at: https://cif.ie/wp-content/uploads/2019/03/CIF-Brexit-report_February-2019-pwc.pdf (Accessed: 14 May 2024).

Pervin, N. and Mokhtar, M. (2022) *The Interpretivist Research Paradigm: A subjective notion of a social context', International Journal of Academic Research in Progressive Education and Development, 11(2). doi:10.6007/ijarped/v11-i2/12938.* (Accessed: 18 May 2024).

Pulla, V and Carter, E. (2018) *Employing Interpretivism in Social Work Research', International Journal of Social Work and Human Services Practice, Vol.6. No.1 March, 2018, pp. 9-14* (Accessed: 18 May 2024).

Real Estate Blog. (2024) *Beyond Four Walls: Exploring the World of Luxury Real Estate.* Available at https://www.gersbachfirman.com.au/2024/03/26/beyond-four-walls-exploring-the-world-of-luxury-real-estate/ (Accessed: 18 May 2024).

RICS. (2024) *Welcome to RICS.* Available at: https://www.rics.org/ (Accessed: 18 May 2024).

RICS. (2024) '*What is the difference between Tier 1, Tier 2 and Tier 3 Builders ?'* Available at https://stravelles.com/what-is-the-difference-between-tier-1-tier-2-and-tier-3-builders/ (Accessed: 18 May 2024).

RICS. (2021*) Construction counts the cost of COVID-19.* Available at https://ww3.rics.org/uk/en/modus/built-environment/construction/construction-expectations.html (Accessed: 18 May 2024).

Roberts, S.S. (2023b) *An evaluation of International Real Estate Investors and ...*, *https://dspace.mit.edu/bitstream/handle/1721.1/150279/Roberts-Shermika-msred-cre-2023-Thesis.pdf?sequence=1*. Available at: https://dspace.mit.edu/bitstream/handle/1721.1/150279/Roberts-Shermika-msred-cre-2023-Thesis.pdf?sequence=1 (Accessed: 14 May 2024).

Romeo, C. (2019) Business Insider India *Inside Italy's $1 billion marble mountains that produce more tons than anywhere else on Earth*. Available at https://www.businessinsider.in/inside-italys-1-billion-marble-mountains-that-produce-more-tons-than-anywhere-else-on-earth/articleshow/69950381.cms (Accessed: 18 May 2024) .

Salau, M. and Archer, J. (2020) *On-site Covid Health & Safety – An Update, Ireland - Operational Impacts and Strategy*. Available at: https://www.mondaq.com/ireland/operational-impacts-and-strategy/1000882/on-site-covid-health-safety-an-update (Accessed: 13 May 2024).

Saleem, H. and Burney, A. (2008) *(PDF) inductive and Deductive Research Approach*, *https://www.researchgate.net/publication/330350434_Inductive_and_Deductive_Research_Approach*. Available at: https://www.researchgate.net/publication/330350434_Inductive_and_Deductive_Research_Approach (Accessed: 14 May 2024).

Sampson, T. (2017) *Brexit: The Economics of International ... - LSE research online*, *https://eprints.lse.ac.uk/84192/1/BrexitDisintegration_Final.pdf*. Available at: http://eprints.lse.ac.uk/84192/1/BrexitDisintegration_Final.pdf (Accessed: 14 May 2024).

Sarker, S., Xiao, X., Beaulier, T., (2013) *Qualitative Studies in Information Systems: A Critical Review and Some Guiding Principles'* Available at https://www.jstor.org/stable/43825778 (Accessed: 18 May 2024).

Saunders, M.N. *et al.* (2019) *(PDF) Research methods for business students' chapter 4: Understanding research philosophy and approaches to theory development*, *https://www.researchgate.net*. Available at: https://www.researchgate.net/publication/330760964_Research_Methods_for_Business_Students_Chapter_4_Understanding_research_philosophy_and_approaches_to_theory_development (Accessed: 14 May 2024).

Schouenborg, B., Grelk, B. and Malaga, K. (2007) *Testing and assessment of marble and limestone (team)—important results from a large European research project on cladding panels', Journal of ASTM International, 4(5), pp. 1–14. doi:10.1520/jai100855.* (Accessed: 15 May 2024) .

Scott, L. (2014) *(PDF) proceedings of ARCOM doctoral workshop on research methodology, https://www.researchgate.net/publication/282912642_Proceedings_of_ARCOM_Doctoral_Workshop_on_Research_Methodology*. Available at: https://www.researchgate.net/publication/282912642_Proceedings_of_ARCOM_Doctoral_Workshop_on_Research_Methodology (Accessed: 14 May 2024).

Selwyn,A., Hickey, M. (2024) *Savills Global Luxury Retail 2024 Outlook*. Available at: https://www.savills.com/research_articles/255800/362063-0 (Accessed: 18 May 2024)

Shaheen, M., Pradhan, S. and Ranajee, R. (2019) *Sampling in qualitative research', Advances in Business Information Systems and Analytics, pp. 25–51. doi:10.4018/978-1-5225-5366-3.ch002.* (Accessed: 15 May 2024)

Shaltami, O.R. (2020) *(PDF) marble and granite - researchgate, https://www.researchgate.net/publication/339552197_Marble_and_Granite*. Available at: https://www.researchgate.net/publication/339552197_Marble_and_Granite (Accessed: 14 May 2024).

Shanahan,M, (2020) *IBEC Report Ireland –the Global BioPharmaChem Location of Choice. A Strategy for the BioPharmaChem Manufacturing Sector in Ireland 2019-2023.* (Accessed: 15 May 2024)

Shuster, E. (1997a) *'Fifty years later: The significance of the nuremberg code', New England Journal of Medicine, 337(20), pp. 1436–1440. doi:10.1056/nejm199711133372006.* (Accessed: 15 May 2024).

Shuster, E. (1997b) *What is research ethics?, What is Research Ethics? - UCD Research Ethics*. Available at: https://www.ucd.ie/researchethics/about/whatisresearchethics/ (Accessed: 14 May 2024).

Stephens, M. Cross, S. Luckwell, G. (2020*) Coronavirus and the impact on output in the UK economy: April 2020.* Available at: https://www.ons.gov.uk/economy/grossdomesticproductgdp/articles/coronavirusandtheimpactonoutputintheukeconomy/april2020 (Accessed: 18 May 2024).

Stravelles. (2022) *What is the difference between tier 1, tier 2 and Tier 3 builders ?.* Available at: https://stravelles.com/what-is-the-difference-between-tier-1-tier-2-and-tier-3-builders/ (Accessed: 14 May 2024).

Tengli, M.B. (2020) *(PDF) research onion: A systematic approach to designing research methodology*, *https://www.researchgate.net/publication/357284560_RESEARCH_ONION_A_SYSTEMATIC_APPROACH_TO_DESIGNING_RESEARCH_METHODOLOGY*. Available at: https://www.researchgate.net/publication/357284560_RESEARCH_ONION_A_SYSTEMATIC_APPROACH_TO_DESIGNING_RESEARCH_METHODOLOGY (Accessed: 14 May 2024).

The EU-UK trade and cooperation agreement (2021) European Commission. Available at: https://commission.europa.eu/strategy-and-policy/relations-non-eu-countries/relations-united-kingdom/eu-uk-trade-and-cooperation-agreement_en (Accessed: 13 May 2024).

Thesismind. (2019) *Analysis of Saunders Research Onion*, Available at https://thesismind.com/analysis-of-saunders-research-onion/ (Accessed: 14 May 2024).

UK Government Report (2020), *UK-EU Trade and Co-Operation Agreement.* Available at https://assets.publishing.service.gov.uk/media/602cf3dbd3bf7f031ce1360e/TCA_SUMMARY_PDF_V1-.pdf (Accessed: 18 May 2024).

Varadkar , L. (2021) *Irish exports steadied at €25.48bn in 2020 despite covid-19 and Brexit challenges, gov.ie*. Available at: https://www.gov.ie/en/press-release/69190-irish-exports-steadied-at-2548bn-in-2020-despite-covid-19-and-brexit-challenges/ (Accessed: 14 May 2024).

Vardy, E. (2021) *Brexit: Counting the cost of the Irish Sea Border*, *BBC News*. Available at: https://www.bbc.com/news/uk-northern-ireland-56597642 (Accessed: 13 May 2024).

Ward, B. (2021) Construction materials: The current state of play, RICS. Available at: https://ww3.rics.org/uk/en/journals/construction-journal/construction-materials--the-current-state-of-play.html (Accessed: 13 May 2024).

Ward, D. (2022) Addressing the Shortage of Construction Workers in Ireland Available at https://www.civilandconstruction.ie/2022/02/23/addressing-the-shortage-of-construction-workers-in-ireland/ (Accessed: 18 May 2024)

Wang , X. and Cheng , Z. (2020) *Cross-sectional studies: Strengths, weaknesses, and recommendations,*. Available at: https://www.sciencedirect.com/science/article/pii/S0012369220304621 (Accessed: 14 May 2024).

Wijffelaars, M. (2020) Covid-19 has a devastating impact on Italy's economy, Rabobank. Available at: https://www.rabobank.com/knowledge/d011309227-covid-19-has-a-devastating-impact-on-italys-economy (Accessed: 13 May 2024).

World Health Organization. (2024) *Frequently asked questions.* Available at: https://www.who.int/about/frequently-asked-questions#:~:text=What%20is%20the%20World%20Health,health%20and%20serve%20the%20vulnerable. (Accessed: 18 May 2024)

Wright, R. (2020) FINANCIAL TIMES *Pandemic strains shipping, air and rail freight operators. Established wisdom on lean inventories and extended supply chains is under threat. Available at https://www.ft.com/content/8403ddbc-9363-11ea-899a-f62a20d54625 (Accessed: 18 May 2024).*

Zotto, D, M. (2020) *The Secret To Selling Luxury Real Estate* Available at: https://www.forbes.com/sites/forbesrealestatecouncil/2020/07/14/the-secret-to-selling-luxury-real-estate/?sh=2b7147364108 (Accessed: 18 May 2024)

APPENDIX

Recruitment Email/Material

Recruitment Email/Material

My name is David Linehan, and I am an Executive MBA candidate at Dublin Business School. As part of the requirement for my MBA, I am conducting a qualitative analysis dissertation titled: *To review the impact of Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically for tier three construction firms.*

To participate, you must meet the following criteria:

Be 18 years of age or older.

Be employed at a tier-three construction firm that utilises marble in commercial fit-out/construction projects. Tier three construction firms are 'those with a turnover of less than $100 million, which most of the building industry falls into. These range from mid-tier companies that do commercial and apartment projects around $5-$10 million, or smaller fit-out builders, with projects under $1 million (Bradley, C. 2020)

Participation will include an interview with semi-structured questions and should take about 30-60 minutes and will be recorded. An information sheet and subsequent Consent sheet will be provided before the interview commences which will require a signature on the participant's and interviewer's behalf.

If you fit the above criteria and are interested in being interviewed, please contact me directly on LinkedIn or at 10028257@mydbs.ie.

David Linehan Assoc SCSI/Assoc RIC... (He/Him) • You
Estates & New Sites Manager (UK & Ireland) | Executive MBA C...
1mo •

Good Afternoon All

My name is David Linehan, and I am an Executive MBA candidate at Dublin Business School. As part of the requirement for my MBA, I am conducting a qualitative analysis dissertation titled: To review the impact of Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically for tier three construction firms.

To participate, you must meet the following criteria:
Be 18 years of age or older.
Be employed at a tier-three construction firm that utilises marble in commercial fit-out/construction projects operating in Ireland. Tier three construction firms are 'those with a turnover of less than $100 million, which most of the building industry falls into. These range from mid-tier companies that do commercial and apartment projects around $5-$10 million, or smaller fit-out builders, with projects under $1 million (Bradley, C. 2020)

Participation will include an interview with semi-structured questions and should take about 30-60 minutes and will be recorded. An information sheet and subsequent Consent sheet will be provided before the interview commences which will require a signature on the participant's and interviewer's behalf.

If you fit the above criteria and are interested in being interviewed, please contact me directly on LinkedIn or at 10028257@mydbs.ie.

#dissertation

Construction Who's Who #ConstructionWhosWho ...

David Linehan Assoc SCSI/Assoc RICS BA MIPAV MMCEPI M...

1mo •

Good Afternoon All

My name is David Linehan, and I am an Executive MBA candidate at Dublin Business School. As part of the requirement for my MBA, I am conducting a qualitative analysis dissertation titled: To review the impact of Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically for tier three construction firms.

To participate, you must meet the following criteria:
Be 18 years of age or older.
Be employed at a tier-three construction firm that utilises marble in commercial fit-out/construction projects operating in Ireland. Tier three construction firms are 'those with a turnover of less than $100 million, which most of the building industry falls into. These range from mid-tier companies that do commercial and apartment projects around $5-$10 million, or smaller fit-out builders, with projects under $1 million (Bradley, C. 2020)

Participation will include an interview with semi-structured questions and should take about 30-60 minutes and will be recorded. An information sheet and subsequent Consent sheet will be provided before the interview commences which will require a signature on the participant's and interviewer's behalf.

If you fit the above criteria and are interested in being interviewed, please contact me directly on LinkedIn or at 10028257@mydbs.ie.

#dissertation

Like Comment Repost Send

508 impressions View analytics

Information Sheet for potential participants

Information Sheet for Participants

Research project title: To review the impact of Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland specifically on tier-three construction firms.

Student Researcher: David Linehan (10028257@mydbs.ie)

Research Supervisor: Mr David Duff (david.duff@dbs.ie)

About the Project

I am a master's student at Dublin Business School, and I am carrying out my thesis project under the direct supervision of Mr David Duff on the subject of the impact of Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development sector in Ireland, specifically on tier three construction firms.

The research aims to understand and evaluate the impact both Brexit and the COVID-19 pandemic had on the logistics/supply chain of marble for the luxury commercial development sector in Ireland.

I would like to invite you to take part in a recorded interview. *As* a participant in the study, you would be required to answer questions about the above topic.

Data Protection

Interviews will be recorded for the sole purpose of facilitating later transcription of the data. Precise transcripts are important in research to ensure that data is recorded accurately, to allow the interviewer to be more present in the conversation, and, importantly, to support greater accountability and scientific integrity. During the transcription phase, your data will undergo de-identification involving the removal of all personally identifying information thereby rendering them anonymous for retention. The original recordings will be digitized and kept under password protection. Upon graduation, all recordings will be permanently deleted. Your data will be used strictly for academic purposes and will not be shared with used or shared with anyone for commercial purposes. The researcher will adhere to strict ethical guidelines and principles and will not anecdotally share any personally identifying information about you with anyone.

What are the risks and benefits of taking part in this study?

In addition to providing much-appreciated assistance to the student researcher, the main benefit of taking part in this study will be your contribution to academic research, which aims to expand knowledge and generate new insights. There will be no risks posed to you as a participant in this study, either physical or psychological, beyond that which is normally expected of day-to-day activities.

If you are interested in taking part…

If you are interested in taking part, please review the information provided in the consent form and if you are happy to proceed with the study then please indicate your willingness to take part by ticking the appropriate box / signing your name where appropriate.

You are under no obligation to take part in this study or to provide a reason if you decide not to take part. You may choose not to take part without fear of penalty. If you agree to take part, you have the right to cease participation and withdraw your data at any time for any reason without fear of penalty. The data will not be used by any member of the project team for commercial purposes.

Consent Form

Consent Form

I_____ voluntarily agree to take part in this research study.

I understand that I am not obliged to take part in this study and that my participation in the study is entirely voluntary.

I understand that I am free to withdraw from the study at any time or refuse to answer any question without the need to provide reason and without fear of negative consequences.

I understand that digital recordings will be stored under password protection for some time until the approval of their dissertation by the examination board, at which point recordings will be permanently deleted. I understand that my data will undergo de-identification during transcription and will be rendered anonymous for retention and for the purpose of subsequent publications. I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.

I understand that I will not benefit directly from participating in this research.

I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

I understand that signed consent forms will be retained for some time until the exam board confirms the results of their dissertation.

I confirm that I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study with satisfactory answers provided.

I confirm that I have read and fully understood the information provided and statements above.

Name & Signature of Research Participant | Date

_____ _____

Name & Signature of researcher | Date

_____ _____

* Completed consent forms are available upon request due to GDPR and confidentiality of the participants

Semi Structured Interview Format

Semi-Structured Interview

Length of interview:

Respondent Profile

Date of interview: **Gender:** **Age:**

I- Interviewer **R-** Respondent

I- Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated.

I- Can you discuss what involvement your firm has in general with sourcing marble as a material on construction projects?

I- How did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

I- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

I- Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients? Can you provide specific examples?

I- Has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble? Can you provide specific examples?

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

I- How have these events affected the costs of sourcing and shipping marble?

I- Has your company considered implementing any long-term strategic changes in sourcing marble due to Brexit and the Covid COVID-19 pandemic?

I- How do you see the future of marble sourcing in Ireland given these events?

I- What lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to the luxury commercial development sector in Ireland?

Semi Structured Interview 1

Dublin Business School

Semi-Structured Interview

Length of interview: 04:29

Respondent Profile: Operations Director with Tier Three Construction Firm

Date of interview: 20/03/2024 **Gender:** Female **Age:** 35

I- Interviewer **R-** Respondent

I- So Anne Marie thank you for your time in agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, with that are you comfortable proceeding with the interview?

R-Yes

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated also.

I- So Firstly can you discuss what involvement your firm has in general with sourcing marble as a material on construction projects?

R- Typically as a general contractor we source the material for any of our clients depending on what their finish schedule looks like within project so that that job would fall on us to go out to the market and get quotes for materials such as marble

Commented [DL1]: Source marble as material for clients

I- How did your navigate Brexit and COVID-19 in terms of sourcing marble for say the luxury development /commercial development sector in Ireland?

R- In terms of sourcing it with regards to Covid 19 and Brexit there is a couple of issues there. Importing goods if we didn't, if there was any major issues in terms of long lead items or something that wouldn't meet client deadlines, we probably have to look to source additional materials

Commented [DL2]: Source different materials to marble

I- And did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID and Brexit periods?

R- Yeah programmes would have been pushed out due to lead times.

Commented [DL3]: Impact on programmes. 50% impact on programme

I- Would you have a rough timeframe pre covid to during covid?

R- Oh yeah before covid it would probably be 4 weeks, 4-6 weeks and then after Covid probably if you were able to get it 12 weeks if that.

I-Ok so 50% impact on the programme?

R- Ya easily

I- Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients?

R- I think during the time of Covid 19 it would have hindered some of the relationships but again it was something uncontrollable was Covid 19 , so I don't think any relationships were permanently damaged by it, it was just try to come to the best solution to meet their needs.

I- And has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble?

R-Yeah we probably look to alternative sources of marble, mainly with the Brexit/Covid things has kind of come back to more of a normal , normal route. That's basically it

Commented [DL4]: Alternative sources

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Yeah I think we had to go source alternative suppliers for materials so we kind of broadened our supplier list in terms of those who provide marble.

Commented [DL5]: Broadened supplier list

I- How have these events affected the costs of sourcing and shipping marble?

R- It would have increased the costs significantly so that would have been one of the downsides to it.

Commented [DL6]: Cost increases

I- Has your company considered implementing any long-term strategic changes in sourcing marble due to Brexit and the Covid COVID-19 pandemic?

R- Yeah just looking for more alternative sources for suppliers really

Commented [DL7]: Alternative sources

I- How do you see the future of marble sourcing in Ireland given these events?

R- I think just forcing people to look elsewhere more towards the EU but then you have to incorporate probably longer lead in times for that and cost for transport as well so a bit more planning put behind it if you are actually going to go ahead with marble and try to provide alternatives to clients.

Commented [DL8]: Increase cost of transport, longer lead in times or alternatives to clients

I- What lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to the luxury commercial development sector in Ireland?

R-Similar to the last question, probably just look to source multiple suppliers , different suppliers that would be able to meet their needs

Commented [DL9]: Source multiple suppliers not to be limited to a certain number or market

I- Thank you very much

R-Great

Semi Structured Interview 2

Semi-Structured Interview

Length of interview: 07:34

Respondent Profile: Director- Tier Three Construction Firm

Date of interview: 22/03/2024 **Gender:** Male **Age:** 41

I- Interviewer **R-** Respondent

I- Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-Yes no problem David

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated.

I- Can you discuss what involvement your firm has in general with sourcing marble as a material on construction projects?

R- So we have Paul Kay in our office here that looks after Ireland and the UK and deal with clients that need marble. We are actually working on a project at whereby we are buying a lot of marble stone tops and staircases for hospitality project in Dublin.

Commented [DL1]: Sourcing marble for clients on specific projects

I- Very good, the second question then is how did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

R-It became very tricky during Covid I suppose with the shipping side of things cause most of the marble we bring in is from overseas so ya during Covid it was extremely complicated, a lot of deliveries coming in that would have been captured and held in port. Obviously they were checking to make sure that there was no , I suppose from a Covid 19 perspective, no contamination coming in on sites so that was very very challenging. We dealt with that through liaising with clients and updating them on a daily and weekly basis.

Commented [DL2]: Transportation difficulties by sea

Commented [DL3]: Communication and liaising with clients

I- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Ya absolutely during both periods, mainly on Covid 19 it became really tricky from a delivery and logistics point of view and also the cost of the shipping went up nearly five times the normal shipping price so what was really challenging in terms of delivering projects within the budget that was set out at the start but again liaising with clients and letting them know the impact was the way we got through that. Also, with Brexit it didn't really affect us as much ,that much in Ireland more so the UK where we had European borders starting to close with the UK

Commented [DL4]: Increased cost of transportation by sea

Commented [DL5]: Cost implications to clients

I- And what kind of an impact on programme would it have had in terms of timewise say pre covid to during covid?

R- It is kind of hard to say on any one specific project but let's say a project that would last 12 weeks would probably on an impact on particular items like stone , marble that would have possible 3-4 week delay certain to circumstances. Not all but in certain ones, in the peak of when we returned to work from Covid it had a major major impact on programme, hugely impacted.

Commented [DL6]: 3-4 week delay to programme

Commented [DL7]: Return to work challenging re keeping to programme

I- And Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients?

R- It has probably helped in some ways, it has widened our reach with more suppliers in the marketplace, we have probably driven ourselves indirectly sourcing from more countries. It has

Commented [DL8]: Dealing with more suppliers now in different countries

probably helped us a little bit , you can say it may have slightly hindered us in the UK from a Brexit perspective but we are limited to certain guys that carry the certification under British standards and the likes so. But there is a balancing act, it definitely helped from the outbreak of Covid and then slightly hindered us in the UK.

I- Has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble?

R-No not at all, we deal with very trusted partners and brokers in the marble industry so no, no issue there at all.

Commented [DL9]: Trusted partners and Brokers

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Well we brought in a second procurement manager into the business and that has really probably helped, again widening our reach and getting more accessible providers in the marketplace and to ourselves, mainly in the Irish market. So it pushed us to have again more of a reach for a business perspective to suppliers and Brokers so I keep saying Brokers because we deal with a lot of third-party brokers who would have a huge reach into Middle East on marble providers.

Commented [DL10]: Additional procurement manager - widened reach in the Irish Market

Commented [DL11]: Middle East Providers

I- How have these events affected the costs of sourcing and shipping marble?

R- It has fluctuated, the cost has peaked you know certain times like within 8 months from returning to work after Covid it peaked to its highest but has come down now substantially and there was a little bit of inflation with the Ukrainian/Russian war it has peaked again but it is going back down to stable level

I- A Pre Covid level is it?

R- Slightly higher than Pre Covid

Commented [DL12]: Cost peaked returning to work from Covid, Ukraine/Russia War a factor

Commented [DL13]: Price currently higher than pre covid levels

I- Has your company considered implementing any long-term changes in sourcing marble due to Brexit and The Covid 19 Pandemic?

R- **None other than we have framework agreements with certain marble suppliers, we lock in our prices on a six-monthly basis so other than that, nothing other than that, nothing has changed or been implemented**

I- How do you see the future of marble sourcing in Ireland given these events?

R- I don't see any change other than what we implemented ourselves. Marble sourcing can be pretty tricky depending on the project spec. Book matched marble can become extremely complex to find the right supplier, quality and coloration and all that but again we have extremely long-term trusted partners we deal with on marble. We would have worked with five different providers in the marketplace and we will never go outside that again because of quality and reassurance.

I- What lessons have been learned that could be beneficial for future unexpected events or crisis in terms of marble supply to the commercial/luxury commercial development sector in Ireland?

R-It is very hard to answer that , it is not something that is stockpiled, it is not something that just put up on the shelves so it is all to do with the timing of the project. That's something that I couldn't give any really I suppose full advice on. It's a project-by-project basis, you know something that is ten months down the line, a pandemic hits next month there is very little we can do to prevent that from happening.

Commented [DL14]: Framework agreements with certain marble suppliers. Prices locked in six monthly basis

Commented [DL15]: Five trusted partners for the sourcing of Marble

I- Have you stockpiled it?

R- No it is something we wouldn't stockpile again, it is a project by project basis. Its the client's preference , designer opinion again if a product is a certain style, look feel book matched it is very hard to have that stockpiled. Impossible actually, its cut as per the project

Commented [DL16]: Would not stockpile

I- Great David thank you for your time

R- No problem at all

Semi Structured Interview 3

Semi-Structured Interview

Length of interview: 08:42

Respondent Profile: Managing Director with Tier Three Construction Firm

Date of interview: 20/03/2024 **Gender:** Male **Age:** 58

I- Interviewer **R-** Respondent

I- Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the interview sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-I am.

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated.

R- Ok

I- First question, can you discuss what involvements your firm has in general with sourcing marble as a material on construction projects?

R- Well we do fit-outs, large-scale fit-outs for main contractors and for clients and some of them will want marble, some of them will want granite and some of them will want tiles, marble tiles, porcelain tiles which would all come from the same type of family so we would have a lot of involvement in that yeah.

Commented [DL1]: Projects where marble is required

I- How did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

R- During Covid 19 many projects we were on closed due to government restrictions on working, we weren't really caught badly with any of that but some of them did stay open and those that did stay open were able to get around the marble problem by using a substitute if and when it is if we hadn't got marble we would use a substitute that they are happy with, the client was happy with because they understood the implications of Covid and same as Brexit as well.

Commented [DL2]: Sourcing a different product that marble

Commented [DL3]: Clients understood the implications both Covid and Brexit brought

I- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Yeah there were definitely restrictions on getting material from anywhere in the country , in Ireland or abroad because of the restrictions on the movements of vehicles and people and that and it left us with to having to look around as close as we could in the country here to source it off the Quarries that were open.

Commented [DL4]: Difficulty with sourcing material, restrictions on vehicles and people

Commented [DL5]: Micro perspective with sourcing the product rather than overseas due to the restrictions

I- And was there much of a change on say the programme . would you have been changed compared to pre covid and pre-Brexit levels?

R- Yeah the program would have definitely been affected, the programs were really shot, gone at that stage, your supply chain sort of dried up so definitely programs were affected. We had to re-look at programs again and try to source, source it wherever you could source to the nearest product that they were looking for or come equivalent too so programmes were definitely pushed out yeah over the COVID thing.

Commented [DL6]: Programmes effected, supply chain effected

Commented [DL7]: Alternative products

Commented [DL8]: Covid affected programmes

I- Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients?

R- No it hasn't really hindered or damaged the relationships but what it has done we have had to broaden our scope you know, suppliers like , outside to where we normally would have went with. We would have look elsewhere or again as I said to you alternative materials other than marble.

Commented [DL9]: Broaden scope in terms of suppliers, alternative materials

I- Has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble?

R-Our sourcing strategy was affected yes, we have since brought in two new purchasing people into our company here to look at sourcing materials, not just marble but other types of materials as well because we find a lot of time was wasted, not wasted but not efficiently used after Covid because we weren't too sure where to go, what to do. These purchasers are people we brought in know where to go , know where to look for certain materials so we have, yeah we have changed our direction slightly from what it was before covid.

Commented [DL10]: Additional employees re procurement

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Well the two new purchaser people we have in place, that has brought around a different strategy for buying and for sourcing since covid as I say earlier probably it was something we needed to look at anyway but we are happy that we have done that, we are staying on top of it there now, we seem to be on top of it there now and we look into the future of continuing that process a lot more than we were before.

Commented [DL11]: Buyers/procurement specialists were needed and required as know where materials can be sourced and at competitive pricing

I- How have these events affected the costs of sourcing and shipping marble?

R- Well the cost as everyone knows has risen drastically with fuel costs and with labour costs and everything like that. This country alone not unlike any other country as well got the same type of problems, labour shortages and everything like that has affected the sourcing of marble and products similar to marble. We have looked at say like Italy , Spain and China as well but like with Covid and everything like that happened, different places had different restrictions at different times but it meant that your restrictions were, you might have to go to Spain this month and it could be Italy next month , could be China the month after but it was difficult, yeah it was difficult but we managed to do it.

Commented [DL12]: Fuel and labour costs risen drastically

Commented [DL13R12]: Has effected the sourcing of marble and similar products

Commented [DL14]: Different Countries lockdown at differing period put pressure on souring materials

I- Has the company considered implementing any long-term strategic changes in sourcing marble due to effects of Brexit and the Covid COVID-19 pandemic?

R- Well we think we have sourced other suppliers there now in the Country and outside of the country for the long term. We wouldn't have had probably been forced into doing it before because of Covid. We would look at different strategies and ways of doing things , we have looked at that and for the long term thing we think that the purchasing people we have in place now use their methods and that will in the future to keep that continuing on as it is yeah.

Commented [DL15]: Sourced different suppliers

Commented [DL16R15]: Covid was the catalyst to this change

Commented [DL17]: Procurement specialists aided

I- How do you see the future of marble sourcing in Ireland given these events? A positive or a negative light?

R- It would be much easier if we had not to go outside the country for a start because you are probably more user friendly, less pollution and less carbon footprint created , source it local so. Sometimes you just can't, sometimes you can but if probably more support for local suppliers /quarries it might be the answer in the long run. I know costs are quiet high here at the moment for both labour and material , housing doesn't make it the most attractive country to do scaling up like that so to export might not be the way but not right now but maybe getting ready for the future it might be

Commented [DL18]: Source locally, ESG

Commented [DL19]: Government support for local/Irish quarries

Commented [DL20]: Cost for labour and materials high, housing issues so companies cant scale up

I- And What lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to the luxury commercial development sector in Ireland?

R- I suppose you try and buy a quarry, if you cant buy a quarry you would probably look at trying to do a deal if you knew something like this was coming down the line. You would look at tyring to keep a quarry guy in mind that he has a supply there for you or he is trying to stockpile it as much as he can without over-exerting the coffers

Commented [DL21]: Industry relationship with supplier to stockpile certain product

I- Thank you Fechin for your time

R- No problem David you are welcome

Semi Structured Interview 4

Semi-Structured Interview

Length of interview: 22:01

Respondent Profile: Commercial Director with Tier Three Construction Firm

Date of interview: 22/03/2024 **Gender:** Male **Age:** 44

I- Interviewer **R-** Respondent

I- Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-Yes

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated also.

I- Can you discuss what involvement your firm has in general with sourcing marble as a material on construction projects?

R- We have a tier three fit out company and we source marble for hospitality industry , construction industry in Ireland. Our work involves medium sized contracts, our sourcing of our marble , we do sourcing of marble from all different parts of the world. We used to do a lot of sourcing let's say through the UK but Covid has affected this and Brexit has really affected this. This has I suppose affected our business in a major way because when Brexit came there were a lot of additional taxes for our company, we were not able to I suppose for our company we are a tier three company , we don't have the resources like tier one companies so we have to look at maybe further afield for sourcing marble , Middle East, Asia has been the area we have looked at. India , we have looked at these locations for sourcing marble and this is probably our future

Commented [DL1]: Covid and in particular Brexit has effected sourcing of marble

Commented [DL2]: Additional taxes due to Brexit

Commented [DL3]: Don't have the resources Tier one construction companies have

where we are sourcing marble from these locations and you know I suppose it makes things a bit more difficult. There is more costs involved, logistics involved of bringing Marble from let's say from the likes of Asia and India, it is more difficult. You also have the language barrier's a problem, you have currency fluctuation is another problem, they deal with Indian ruby and you know you get currency fluctuations there against the euro so these are all factors that probably have a negative impact on our business just because you know we are pricing for jobs now and by the time everything comes you know that could be , that could be 2-3 months , currency fluctuations. You have war going on in Ukraine and Gaza and so the cost of , the cost of delivering marble has to come by ship so the cost of delivering marble has become more expensive because they can't go through , they have to take a different route up towards Russia I think they go now where they don't cause of the war. They have to take a different route so these are factors that we can't I suppose its very hard to go to a client and say that we need to look for extras for these. So yeah for tier three contractors, it is difficult times.

Commented [DL4]: Due to Brexit having to source marble from Middle East etc, language barriers, currency fluctuation

Commented [DL5]: Transportation costs and impacts of Ukraine/Russia war and war in Gaza

Commented [DL6]: Costs passed on to the client

I- And James How did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects? You would have touched on a bit of it there

R- Yeah so like as I was saying the UK market was obviously our biggest market for buying marble and when Brexit was introduced or came into force this kind of, we had to look to different markets . We had to look at Asia , looked at India and Asia and we looked at the Middle East so we are not buying any marble through the UK anymore. Covid obviously was a huge impact on every business including ours , I think no one escaped this and a lot of our projects were stopped and you know getting marble ,getting any products including marble just became extremely difficult and as I said we are a tier three Contractor you know , we don't have the buying power of , to put marble into storage for long periods so we generally would buy product as we need and Brexit has been a huge impact for us and increases costs for us because now we not buying from the UK because of extra taxes and so as I say with the war , shipping costs, you know fuel costs increase so these are all have a negative impact on our business and marble costs have increased as well now because we had to, we are sourcing marble from further away from Ireland like Asia, it is more expensive to ship to Ireland so we have had to pass this on to our customer and you know we made them aware of that and you know unfortunately when we price jobs we may not get jobs for 6 months after we price the job and by the time the marble

Commented [DL7]: Looked to different markets than UK when Brexit introduced

Commented [DL8]: They are not buying marble through the UK anymore

Commented [DL9]: Fuel costs a factor

Commented [DL10]: Cost passed on to client

comes to the country, the cost of shipping , customs you know these are all factors that are out of our control and it makes it more difficult for a tier three Contractor

Commented [DL11]: Cost of shipping

I- And James did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Sorry can you repeat the question

I- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Absolutely yeah, so so programs were, a lot of our programs were extended probably 6-9 months so as well as not being allowed, a lot of our projects were closed , we were doing some work in for hospital fit outs so these projects were allowed to continue however some of our other projects were not due to Covid restrictions so these projects were, there was extended delays and there was also then extended delays in getting marble to Ireland. Unfortunately, Ireland is an island so everything has to come in by boat so ships were not operating during covid and marble the companies we were dealing with they were not manufacturing marble either so so probably 80% of our projects were delayed on average 6 months

Commented [DL12]: 6-9 month delays

Commented [DL13]: 80% of projects delayed by 6 months. Some were shut down

I- Ok

I- And Has Brexit and the pandemic helped or hindered your relationships with marble suppliers and end-user clients?

R- So Brexit has affected our relationship with existing marble suppliers because the cost , the cost of bringing marble from these suppliers through the UK has become now too expensive with customs and the various costs involved so it has affected, it has affected our company with these supplier, it is also affected our customers because a lot of our customers would have, would be familiar with our previous suppliers, who are UK suppliers. So we have had to inform our customers that we no longer use our UK suppliers for marble because of Brexit so we have introduced new suppliers, so when one door closes another door opens so we have made new connections with new marble suppliers in different parts of the world , Europe, Italy, Middle East

Commented [DL14]: Cost of bringing product through UK is now too expensive with customs other costs

Commented [DL15]: No longer using UK suppliers

Commented [DL16]: New marble producers sourced

and Asia and our customers are happy with the product , we have shipped samples albeit there is more time involved in shipping the product but in general our customers are happy with the product that we are getting. It's going to be slightly more expensive for them which they are not too happy with but I think they have accepted the reason for it and they have also accepted a bit more delay in delivery times

Commented [DL17]: Further time to source from these countries

Commented [DL18]: End cost more expensive for the client

Commented [DL19R18]: Accepted time delays

I- Has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble? I know that you mentioned there that you are using marble from different countries, different suppliers , I think you have answered it in the previous question but it is no harm to ask it again?

R-Yeah so our strategy now is that is we are dealing with local suppliers for example we have people in India who are sourcing new Marble for us, new different strains of marble , it has opened up a different , a more variety of marble so new countries I suppose , new rock is offering us more products , different variety of products so the customer is getting a better quality maybe or better selection albeit they are paying a bit more because it increased shipping costs with Brexit you know we are not sourcing any products through the UK which we used to source before so our strategy has changed and we have had to change because of Brexit so you know I think a lot of companies you know we are tier three contractor so you know margins are tight and we cant, we cant stockpile our marble so we generally will order what we are using and we don't stockpile this product. It is too bulky and too expensive.

Commented [DL20]: Sourcing through new countries

Commented [DL21]: Client paying more

Commented [DL22R21]: Due to increased shipping costs due to Brexit

Commented [DL23]: Not sourcing any material through the UK

Commented [DL24]: Tight margins as a tier three company

Commented [DL25]: Not stockpiling

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Can you repeat the question please?

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Ok so our supply chain now is coming from India so when prior to Brexit being introduced UK directly to our warehouse just outside Dublin so it was an easy method for getting product from UK to Ireland. We can't now so we are now sourcing our product from India and this comes by ship, we have to go and inspect the product there which makes it more difficult because it is more costly as we have to go and inspect the product before leave and we are obviously using suppliers in India who speak a different language , who have a different currency and you know there are different customs , different shipping agents and you know we are trying to use two shipping agents who have already being working with other Irish companies, so we have got referrals from other companies who have used shipping agents and clearing agents who are familiar with dealing with shipping of goods between Ireland and India so this has given us confidence to work with these companies but this is our new supply chain and to date it is working, it is a bit more expensive , it is a bit more time involved because it is coming from India and with the wars at the moment , the ships have to take a different route and it is adding about 2 weeks on to delivery times but I think this is the nature of the world at the moment.

Commented [DL26]: Product now coming from India, previously UK

Commented [DL27]: Extra cost due to supplying from India- currency, product sign off etc

Commented [DL28]: Two week delay, more time involved due to routes ships are taking due to the war in Ukraine

I- How have these events affected the costs of sourcing and shipping marble? I know you probably mentioned it briefly there but just to re iterate it again

R- So because of Brexit and Covid we have had to source for example we are sourcing from India at the moment so there is increased costs for us because our our our sales manager has had to go to India and he has been sourcing the product in India and it is extra cost to us , there is extra cost in shipping the marble is probably on average around 20-25% more expensive , shipping is more expensive and time involved from shipping from India to Ireland is longer so this also adds time on to the project so in general it probably has cost our company an average of about 25-30% more expensive to supply to our customers.

Commented [DL29]: Sourcing from India, increased costs

Commented [DL30]: Extra cost in shipping the product- 20-25% more expensive

Commented [DL31]: 25-30% more expensive for customer

I- Has your company considered implementing any long-term strategic changes in sourcing marble due to Brexit and the Covid COVID-19 pandemic?

R- So our long term strategy is that we are still trying to source new suppliers , we are meeting new suppliers on a regular basis from India we are also looking at China , we are looking at Kyrgyzstan, we are looking at Italy so we are looking at new suppliers and we have also done recently we have had talks with companies in the Middle East so our long term strategy would be too try and find maybe a supplier in maybe one of each of these countries so that we don't have the same problem that we had when Brexit came along and Covid Pandemic. We are very heavily dependent on the UK and when Brexit came into force this left us in a bad position because we were not able to get marble , we were also you had covid pandemic so our customers were heavily dependant on sourcing the product so I suppose as the saying goes we do not want to have all our eggs in one basket.

Commented [DL32]: Source new suppliers from India, China, Krgystan, Middle East

Commented [DL33]: Were heavily reliant on UK prior to Brexit

I- How do you see the future of marble sourcing in Ireland given these events?

R- I believe that marble suppliers and installers in Ireland have always been heavily dependent on the UK, with Brexit Covid came along the last few years I think that marble companies in Ireland have had no choice but to look in other Countries and some of these countries probably have benefited from the introduction of Brexit and Irish marble companies will have too go further afield and buying marble from these other countries, otherwise they will be out of business because you won't be able to buy marble from the UK.

Commented [DL34]: Look to different countries for sourcing of marble. Avoiding UK

I- What lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to the luxury commercial development sector in Ireland?

R-The lessons we have learned is we were too heavily dependent on the UK, so when the UK introduced Brexit and when the Covid pandemic hit our business, our marble business would have been on the verge of closing because we were sourcing from one country and this country made drastic changes in relation to Brexit and this affected our supply chain and all of a sudden our customers, we weren't able to supply marble for them so we have learned very valuable lessons where we have to look at other countries and we won't be left in the future with one countries supply for our marble. In particular, you have countries at the moment the likes of Ukraine where there is a war going on with Russia, you know it shows an example if you are too dependent on one country it can be fatal for your business. So we have learned from this and we are implementing measures so that we are sourcing products from a variety of countries and probably beneficial to us now as our supplier is getting a wider range of marble and some nicer veins of rock that was not available to our customers before.

Commented [DL35]: Too dependent on UK, Supply chain effected

Commented [DL36]: Sourcing marble from different countries

Commented [DL37]: Souring marble from different Countries has advantages including wider range of marble, nice veins of rock

I- Ok James, thanks very much for your time

R-You're very welcome

Semi Structured Interview 5

Semi-Structured Interview

Length of interview: 06:32

Respondent Profile: Senior Site Manager- Tier Three Construction Firm

Date of interview: 21/03/2024 **Gender:** Male **Age:** 37

I- Interviewer **R-** Respondent

I- Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-I am.

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can also be accommodated.

I- Can you discuss what involvement your firm has in general with sourcing marble as a material on construction projects?

R- So we would run alongside Architects, deal with whatever they specify, high-end office fitouts, luxury commercial offices, high-end commercial aviation companies or US Based companies

Commented [DL1]: Source marble on behalf of architects on high end commercial fit outs

I- How did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

R- Firstly we are a tier three company so the volatility in the market affected us greatly. We had difficulty in sourcing the product, we had to use different avenues, Italy, Spain etc. Generally

Commented [DL2]: Market Volatility affected tier three contractors

Commented [DL3]: Went to different Countries to source product

speaking, it was the client that lost out, the cost was inevitably passed on to the client or the end user.

Commented [DL4]: Cost passed on to the client

I- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Yes we did. Normally you would be dealing with probably an 8-12 week lead in time, and this has gone out as far as 16-26 weeks you are looking at 6 months to get a hold of the product that originally would have taken 8-12 weeks.

Commented [DL5]: Programs doubled

I- Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients?

R- Yes to both of those, Brexit and Covid 19 but you have got to factor in the rules or origin, the extra taxes and as I alluded to before we are a tier three contractor so we simply can't compete with tier one and they get preference so just doubling up on my point of 16-26 weeks on product you know so. Yeah, yeah we are greatly hindered.

Commented [DL6]: Rule of origin &extra taxes

Commented [DL7]: Tier one contractors get preference

I- Has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble? If it has or if it hasn't can you provide specific examples?

R- Yeah we are having to source the market for different suppliers, going as far as the Middle East which has additional cost with transport, fuel costs. You are lucky to get what you need in Spain and Portugal, we are trying to source suppliers in the Middle East even going so far as Procurement Managers going to trade shows out as far as Dubai to speak to Developers etc.

Commented [DL8]: Middle East sourcing the material with additional cost of transport, fuel etc

Commented [DL9]: Procurement manager going to trade shows in Dubai

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R-Yeah just double up on my last point I suppose, we are having to widen our supplier base and going to more Multi Nationals

Commented [DL10]: Widened supply base

I- How have these events affected the costs of sourcing and shipping marble?

R- There is a serious need I suppose for Procurement Managers to do their job more effectively than they were of recent times. Sourcing it from far and wide has proven difficult but we are getting there. Prices have only stabilised but again no one knows the future, this may be for the time being only, and monthly price checks are severely important, is massively important to effectively price a job

Commented [DL11]: Sourcing the material from a variety of Countries

Commented [DL12R11]: Importance of Procurement Managers

I- Has your company considered implementing any long-term changes in sourcing marble due to Brexit and The Covid 19 Pandemic?

R- Let me see, that is a tough question David, can we come back to that one maybe. We will come back to that one

I- How do you see the future of marble sourcing in Ireland given these events?

R- I think government intervention would really help. Everything in Ireland, if you are buying local or you are buying Nationally the cost implications, you know we really need to go , everyone loves to deal in Ireland but sometimes it is not as cost-effective as you like. So you are forced to go internationally and rely on international companies more so than Irish-based companies. So yeah it's not ideal but I suppose its where we are being forced to procure these products

Commented [DL13]: Government support- cost of business in Ireland too high

I- What lessons have been learned that could be beneficial for future unexpected events or crisis in terms of marble supply to the commercial/luxury commercial development sector in Ireland?

R- Definitely don't have all your eggs in one basket, you need to broaden your horizons, implement more of a risk strategy to deal with events such as these.

Commented [DL14]: Risk strategy, don't depend on one source

I- Perfect, I suppose back to the other question then was, has your company considered implementing any long term strategic changes in sourcing marble due to Brexit and the Covid 19 Pandemic?

R- I think I alluded to you there going as far out as the Middle East to see if we can get ahead and see I suppose ourselves and the end user save some money in the long run

Semi Structured Interview 6

Semi-Structured Interview

Length of interview: 06:41

Respondent Profile: Contracts Director with Tier Three Construction Firm

Date of interview: 20/03/2024 **Gender:** Male **Age:** 47

I- Interviewer **R-** Respondent

I- Maurice thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-Yeah that is no problem, no problem

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated also

R- Ok

I- Firstly can you discuss what involvements your firm has in general with sourcing marble on construction projects?

R- Yeah we would come across it for general building works and we do a lot of fit-out works as well so it crosses both sectors to be fair. Both in general building, internal floors, wall claddings stuff like that. Counter tops, work tops yeah

Commented [DL1]: Marble utilised on fit outs and general building works

I- How did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury fit outs/ commercial development projects?

R- Yeah wasn't overly difficult for us, most marble and stones like that are being got from mainland Europe be it Italy, Spain, Portugal. Granite, recently we just got from Portugal so if you don't ship it through Brexit , through England it doesn't really affect. If we had a specific product picked by a client that wanted a specific one we would suggest to them that they pick an alternative that we can source.

Commented [DL2]: Don't ship through the UK

Commented [DL3]: Alternatives being looked at

I- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Again Covid or Brexit didn't overly effect lead in times because as we were coming from mainland Europe , they weren't really effected by Brexit. Covid we did have an impact when there was an industry shutdown, or lockdown I think we had two lockdowns which was pretty unique to be honest in the Country where the whole Construction industry shut down so yes that did impact everything not just marble but it impacted all materials to be honest.

Commented [DL4]: Lockdowns, industry wide shut down

I- Would you have an idea roughly the change in the programme from say pre pre-pandemic to during the pandemic?

R- It was probably weeks. It probably counted for 4-6 weeks in a 12-month programme should we say so yeah that's what it would have amounted too.

Commented [DL5]: Delay of 4-6 weeks in 12 month programme

I- And has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients?

R- It probably helped in so far as you have a strong relationship, you build up a stronger relationship with them because there is issues you have to be mindful of, whereas before you just ordered them, didn't have to worry too much, just had you standard lead in period. Now you have to consider where is it coming from? Is it being shipped through England? Is it on a lorry that is driving through England or the UK? So there are other things that you have to consider so there's probably a closer working relationship with your suppliers as a result.

Commented [DL6]: Building up stronger relationships with suppliers and end user clients

Commented [DL7]: Emphasis on avoiding the UK if possible

I- And Has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble?

R- Slightly as I said and the same with all materials, we do a very preliminary check to see if there are any materials coming through the UK or being shipped through the UK that can affect it so it does mean we do an additional check just to make sure that the procurement of them is not interrupted.

Commented [DL8]: Checks to see if material is coming through UK

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- No major changes other than there's an additional check as I said previously, just an initial check to make sure that it's not going to be hindered through the UK as I said Brexit just has its own issues with customs and slows things down so it hasn't played a significant part in our, but you do have to consider it and address it earlier in the program with the client just to mitigate any potential delays but as I said if there is scope to change alternative product, change marble to granite or source marble from a different country. For most clients that's not an issue to be fair

Commented [DL9]: Custom delays

Commented [DL10]: Consider different product

I- How have these events affected the costs of sourcing and shipping marble?

R- Again no major change , we are sourcing it from Portugal and Italy , Spain sometimes so its, we don't get too much marble from England its just you just have to make sure its not being shipped through England.

Commented [DL11]: Avoiding shipping through the UK

I- Has your company considered implementing any long-term strategic changes in sourcing marble due to effects of Brexit and the Covid COVID-19 pandemic?

R- We have, our purchasing department are engaging with suppliers that, non UK based suppliers so we are getting a database of that . So it is influencing our thinking in terms of our procurement strategy

Commented [DL12]: Engaging with non UK based suppliers

I- How do you see the future of marble sourcing in Ireland given these events?

R- Again I see some clients or developers possibly steering away from marble and picking some either locally based stone or stone that is sourced outside the UK so it is influencing our decision making

Commented [DL13]: Alternative products, locally based stone or stone sourced outside the UK

I- What lessons have been learned that you think could be beneficial for future unexpected events in terms of marble supply to help the luxury commercial development sector in Ireland?

R- Well I think what Covid has done and Brexit for that matter, it does, it does make ya look at your procurement schedule early in the project rather than assuming you can get it in x number of weeks. You do have to consider because there can be delays if particularly it is coming through the UK. If you have no choice but to bring it from the UK, you need to allow an extra 3-4 weeks

Commented [DL14]: Transporting through UK is last resort

I- Ok Maurice thanks very much

R- No problem thanks David

Semi Structured Interview 7

Semi-Structured Interview

Length of interview: 10:16

Respondent Profile: Contracts Director with Tier Three Construction Firm

Date of interview: 20/03/2024 **Gender:** Male **Age:** 37

I- Interviewer **R-** Respondent

I- Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods course, as noted on the interview sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-I am.

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated.

I- The first question, can you discuss what involvements your firm has in general with sourcing marble on construction projects?

R- Ok we are a tier three office fit-out company and work mainly on luxury commercial offices, high end residential, so on so forth but those would be our two main areas. We deal with a lot of US-based companies and they obviously have a preference for using marble in their buildings let it be on floors or commercial kitchen countertops and you know we would be involved in the procurement process of marble and then the installation process there after that.

I- How did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

R- So as a tier three company the market out there is pretty volatile or was at the time. Most of our sourcing would have come through Italy. So we felt that through the Brexit and the Covid 19 process that we needed to look further afield. We went towards Spain, Portugal and the Middle East.

Commented [DL1]: Market Volatility

Commented [DL2]: Expand Countries to source marble in

I- Do you want to take a break Mark

R-I would yeah yes please

I- Thanks Mark , so we will go back to that question how did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

R- So as stated we are a tier three company , we would have mainly sourced from Italy so we had to look elsewhere, Spain, Portugal and The Middle East and you know we had to look at the cost for the end user which was the client and how we went about that in our procurement process so it did involve a lot more time from our company to reach out to different suppliers in those areas

Commented [DL3]: Expanding Countries to source marble

Commented [DL4]: Cost to end user

I- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Yeah we certainly did , what you would normally look at depending on the grade of marble you would be looking for is an 8-12 week turnaround in having the marble supplied and delivered to site and installed. What we found in most cases is that this increased up to a minimum of 16 weeks and in some cases 26 weeks.

Commented [DL5]: Programs doubled

I- Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients? If it has can you provide specific examples?

R- Yeah so I would say more so it has hindered our relationship. I mean when you are bringing product in from other countries I mean you have to factor in the extra taxes, the extra charges you know , that was obviously a big issue for us at the time where we found that tier one contractors they would have relationships built with these suppliers already out in the Middle East, in Spain, Italy Portugal wherever it may be and we wouldn't be able to compete with the costs that they would be getting at the time so we would be getting hit with a lot of the tax where they may have been able to have some way of avoiding that. So yes I would say definitely hindered.

Commented [DL6]: Extra taxes, extra charges

Commented [DL7]: Could not compete with tier one Contractors

Commented [DL8]: Tier three affected by extra taxes Brexit brought about

Commented [DL9]: Covid & Brexit hindered relationship with marble suppliers and end user clients

I- Has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble? If is has can you provide specific examples?

R- Yeah it definitely has, again we have looked toward Italy as being our main point for sourcing marble through out Irish suppliers. We have branched off now into developing relationships with suppliers again in the Middle East. We did visit the Middle East out in Dubai early this year to speak with a number of suppliers which was very beneficial. We have also looked to our own supply chain out in Spain and Portugal areas as well. But the Middle East would definitely be the preferred area for us and again if Brexit and Covid didn't happen we probably wouldn't have reached out that far.

Commented [DL10]: Originally Italy main country for sourcing marble

Commented [DL11]: Middle East is now being utilise for marble

Commented [DL12]: Middle East preferred, Covid and Brexit has enabled contractor to reach out further

I- And would Italy be your main point of contact for marble prior to Brexit?

R- Prior to Brexit we would have sourced all our marble from Italy, all our projects were done through a contact we developed in the Dublin area which we worked through at the time. Now when the challenge of Covid and Brexit came through and hit us we had to reach further afield. We have obviously made contacts further afield and we are using those more so now than before you know.

Commented [DL13]: Prior to Covid all marble from Italy

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Yeah well we definitely widened our supplier base , we now have more options. It has created a form of there is a word I am looking for here, its like a tendering process that we have in place now with our suppliers where we can reach out to four or five different areas and get costs in on that particular marble and it just creates a bit of competition with the suppliers now so it does, so our supply chain would have definitely widened as a result of Covid

Commented [DL14]: Widened supplier base

Commented [DL15]: Competition with suppliers

Commented [DL16]: Widened supply chain

I- And how have these events affected the costs of sourcing and shipping marble?

R- I mean that is the downfall of this, there is now more than ever a need for us to have our procurement manager in the place in the company, possibly even two procurement managers in place. There is more dealings with the logistics around getting the marble over from the Countries now such as Dubai, again Middle East areas. We would have to deal with a lot of the shipping, and logistics on getting the marble into the country.

Commented [DL17]: Importance of procurement manager

Commented [DL18]: Logistics in souring marble from Dubai/Middle East

I- Has the company considered implementing any long-term strategic changes in sourcing marble due to effects of Brexit and the Covid COVID-19 pandemic?

R- Yeah I suppose the one that sticks out here is that we now would have for better words a middle man in the Middle East that we would be dealing with. On that basis we would get him to do most of the dealing with the local suppliers or even further afield in the Middle East with the contacts that he would have built up himself through the years so us having one point of contact has been very beneficial and strategically for us it suits us to work through one person rather than a multitude of people

Commented [DL19]: Middle man/Intermediary deal with local suppliers

I- How do you see the future of marble sourcing in Ireland given these events?

R- You would always have to question you know, could the government do any more in these situations? I mean should the quarrying of marble and other products similar to marble be pushed in Ireland to see if we can quarry them out. I know there is particular areas in the South of Ireland that there is questions over marble being available I mean can that not be pushed have it within our own country. That is a route I would definitely look at

Commented [DL20]: More help from Government needed

Commented [DL21]: More incentive for quarrying the product in Ireland

I- Finally What lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to help the luxury commercial development sector in Ireland?

R- I mean in that particular sector for me it seems that a lot of people are used to dealing with one person right and we definitely need to broaden horizons and have more competition out there. You know travel and all that has become more accessible, we definitely should be looking to other countries as well and you know don't have all your eggs in the one basket on your supply chain.

Commented [DL22]: Diversify in terms of utilising companies from a variety of Countries

I- Thanks very much for your time

R- Thanks very much David

Semi Structured Interview 8

Semi-Structured Interview

Length of interview: 04:47

Respondent Profile: Operations Manager with Tier Three Construction Firm

Date of interview: 20/03/2024 **Gender:** Male **Age:** 41

I- Interviewer **R-** Respondent

I- Niall Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-Yes David I am

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated also.

I- First question, can you discuss what involvement your firm has in general with sourcing marble as a material on construction projects?

R- Yes we would source material , marble stone worktops for luxury residential, high end offices, hospitality, hotels, restaurants and the like

Commented [DL1]: Marble sourced for luxury commercial development projects

I- Very good and How did your firm navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

R- We would have had to increase duration of projects and we would have used alternative material for example Corian and granite

Commented [DL2]: Increase in programme length and alternative materials used as a substitute

I- Very good. did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Some projects by almost double the duration due to longer than expected lead times of the marble.

Commented [DL3]: Programme length doubled for some projects

I- Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients? If it has can you provide specific examples?

R- I would say it has both hindered and helped us, it has hindered us due to having to pass on extra costs to clients and increase programs due to additional lead time but it has also helped us to the point of view in terms of our procurement, we would have had to visit quarries directly to source the materials and our procurement teams went out too other countries mainland Europe and we would have made good connections and contacts out there for the future

Commented [DL4]: Costs passed on to clients

Commented [DL5]: Increase in programme

Commented [DL6]: Wider reach due to Brexit and Covid 19

I- Very good has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble? Can you provide specific examples?

R-Yeah well we have had to go directly to quarries in the likes of the Middle East and parts of mainland Europe, yeah so it has affected us.

Commented [DL7]: Dealing directly with Quarries in Europe and Middle East

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- We would depend less on UK Companies due to you know extra tariffs and logistical issues sourcing from the UK.

Commented [DL8]: Depend less on UK Companies due to extra tariffs and logistical issues

I- How have these events affected the costs of sourcing and shipping marble?

R- We would have more administration and due diligence needed for sourcing products so yeah it has affected us in that sense.

I- Has your company considered implementing any long-term strategic changes in sourcing marble due to Brexit and the Covid COVID-19 pandemic?

R- Yes we did implement changes as far as you know, widening and broadening our supply chain base as we notice Italian quarries are not, they are not trading at full capacity so we have gone to other places like the Middle East and Turkey for example.

Commented [DL9]: Widening and broadening supply chain. Italian quarries not trading to full capacity

I- How do you see the future of marble sourcing in Ireland given these events? A positive or a negative light?

R- Yeah I mean positive, look it it is challenging however the marker has adapted to new ways of sourcing and I would be confident that we would have, we have a wider base of suppliers which look can only be a good thing

Commented [DL10]: Wider supply chain due to Brexit and Covid 19

I- What lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to the luxury commercial development sector in Ireland?

R-I think it is worth considering stockpiling materials, you know if it was possible. Broaden the supply chain and also suggest alternative materials for projects.

Commented [DL11]: Stockpile material if possible, broaden supply chain, alternative materials

I- Any other comments?

R- No, that's it

I-Thanks Niall

Semi Structured Interview 9

Dublin Business School

Semi-Structured Interview

Length of interview: 09:33

Respondent Profile: Construction Director with Tier Three Construction Firm

Date of interview: 26/03/2024 **Gender:** Male **Age:** 42

I- Interviewer **R-** Respondent

I- Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-Yes

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated.

I- Can you discuss what involvement your firm has in general with sourcing marble as a material on construction projects?

R- My most recent role with this company, very little I will be honest with you David but in the past, I had a number of projects, and it is really down to availability is the key issue with marble. Agreeing details that type of stuff

Commented [DL1]: Availability of the product

I- How did your firm (current firm or previous firms) navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

R-With great difficulty I suppose the answer is to that David because there was a scarcity of materials and there is also I suppose restriction on the movement of goods across Continents and

Countries. A lot of stuff coming from the UK so we availed of alternatives such as Corian maybe would have been looked at as alternatives for Marble. So really it is down to the specifier, the end user to what flexibility you would have there.

I- Did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Same answer applies to the previous question, down to quantity and availability, it is really down to that and the restrictions on goods across borders with Brexit and getting stuff I suppose in from Europe was the way you had to go with all that type of stuff so. It was difficult you had to factor in you know marble could be on anything from 12 to 16 weeks lead in when sourcing it you know. Italian marble and stuff like that you are talking probably double that in terms of the Brexit and the Covid and all that.

I- Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients? Can you provide specific examples?

R- I think there is an understanding between suppliers and specifiers that if you were to go for something like that you would have to plan well in advance. Not so much the suppliers as they obviously will be looking to sell the product anyway , the end users you know mightn't be too happy waiting for a product so it is all about how you manage that. You know something specified you cannot get your hands on it you need to be approaching the end user and offer alternatives as we would always do . You either wait for it and pay a premium or you go ahead with an alternative.

I- Has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble? Can you provide specific examples?

R-It would do, it is not something you would source locally probably in Ireland places like Kilkenny or wherever but again you would try and get an alternative. I know Brexit and Covid in particular you take what you get and or what you can get and try and move with that. But again if it is a particular client, high end they don't really care, they want what they want and that's it, get it for us guys, you don't tend to rock the boat there

Commented [DL2]: Scarcity of materials, restriction on movement of goods

Commented [DL3]: Alternative materials

Commented [DL4]: Italian Marble double the lead in time due to Brexit and Covid 19

Commented [DL5]: Offer an alternative to the product

Commented [DL6]: Client if they had to wait would pay a premium or go ahead with an alternative

Commented [DL7]: Alternative products. Lack of availability of Marble in Ireland

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Well in particular with Brexit we would definitely be purchasing more stuff directly from the continent. I suppose a lot of the roofing materials and stuff like that would come from places like Spain, Italy. You would be looking at Merchants that would be dealing with specific products the likes of prime materials for roofing for example. If you can't source locally , everything comes down to a really low stock of materials so again forward planning and looking at availability and alternatives and there was really a lot of collaboration with design teams and specifiers came through seeing what was available and giving something that would match warranty wise and stuff like that so they were flexible about it , the sensible approach.

I- How have these events affected the costs of sourcing and shipping marble?

R- Well hugely, marble like any other product was in, is in or was in short supply so you are going to pay a premium for it. It's like everything else there's a shortage of material you are paying a premium on it and put in the recent number of years , the inflation and stuff like that just see how many contractors have had to go back to sympathetic probably clients and look for an increase in terms of price. 12 months of 18 months ago you couldn't stand over a price so particularly reluctant to enter into contracts for any length of time. I mean a good example would have been coming out of Brexit and settling down a bit then you have the war in Ukraine so the whole market has been turbulent for the past 3-4 years probably so am yeah the cost of shipping has gone up you know significantly, the cost of fuels and everything else with the oil crisis and all that type of stuff so . That has to be passed on , that's the thing , passed on it gets passed on to the customer at the end of the day

I- Has your company considered implementing any long-term strategic changes in sourcing marble due to Brexit and the Covid COVID-19 pandemic?

R- Certainty at tender stage now we would look a lot more closely , any product marble in particular you be importing and you make contact with a supplier. Its very difficult if you don't have a letter of intent to try and tie the slot with the supplier of any description so we would deal

Commented [DL8]: Forward planning, looking for alternatives

Commented [DL9]: Price rise passed on to client

Commented [DL10]: Volatile market -Ukraine war

Commented [DL11]: Cost of shipping increased

Commented [DL12]: Cost of fuel increased due to oil crisis

Commented [DL13]: Costs gets passed on to end user client

a lot with the specialists you know whether it be through kitchens or floor finishes and all that type of stuff so we would have to rely heavily on their input also. Their buying power, their capability, their supply chain as we wouldn't really deal directly with any marble suppliers as such but through various different kitchen or flooring contractor is who we deal with. Fortunately we deal with some of the bigger ones in the Country so it helps

Commented [DL14]: Deal with specialists- intermediaries

I- How do you see the future of marble sourcing in Ireland given these events?

R- I see a lot of alternatives now because of the issue with importing product, high-end Corian, high-end granite or whatever it might be that can be sourced locally. You know look to Ireland as much as you can for the product, we don't manufacture a huge amount, but the likes of Corian and that kind of stuff would probably be more readily available in a domestic situation we are probably talking 3- 4 weeks but 12-16 for the higher stuff so that is what we try to do

Commented [DL15]: Alternatives

Commented [DL16]: Micro perspective- source in Ireland or alternative materials

I- What lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to the luxury commercial development sector in Ireland?

R- Forward planning David is the key to anything in terms of materials and if you are dealing with the high end stuff you know whether it be marble for bathrooms, kitchens whatever it might be you need to really look well down the road , I'm talking in excessive of maybe 16-20 weeks just plan ahead. Make sure your designer or your or whether it is the architects or the end user house wife or whether it is a single person in an apartment in Ballsbridge, the finish and to know what they want is so important. People are very tactile and want to see, certainly if you can bring people to a completed development where you have done before it will show them similar finishes, that's always a help. Give the end user in terms of seeing the product and touching it is always beneficial.

Commented [DL17]: 16-20 weeks to plan ahead to source the product

Commented [DL18]: Touch and feel of the product

I- Lovely Nigel thanks for your time

R-You're very welcome

Semi Structured Interview 10

Semi-Structured Interview

Length of interview: 05:51

Respondent Profile: Commercial Director with Tier Three Construction Firm

Date of interview: 26/03/2024 **Gender:** Male **Age:** 53

I- Interviewer **R-** Respondent

I- Thank you for agreeing to take part in this interview. There are going to be a list of questions regarding Brexit and the COVID-19 Pandemic on logistics in the sourcing of marble for the luxury commercial development Sector in Ireland specifically on tier three construction firms. This interview is being carried out as part of my research methods module in my course, as noted on the information sheet you reviewed.

I- To reiterate I would like to assure you that this interview will be confidential; your name will not appear on the interview transcript, are you comfortable proceeding with the interview?

R-I am yeah.

I- If at any point you would like to withdraw from the interview, please let me know. If you would like to take a break during the interview that can be accommodated also.

I- Can you discuss what involvement your firm has in general with sourcing marble as a material on construction projects?

R- We would sometimes be asked to give prices on marble and sourcing it which generally involves long-distance travel overseas, getting pricing and all that but obviously that involves travel across borders and all that which is where your problem with Brexit come into effect

I- Very good and How did your firm (current firm or previous firms) navigate Brexit and COVID-19 in terms of sourcing marble for luxury commercial development projects?

R-Sourcing it initially was probably ok Brexit meant the journey time was extended by quite a bit and similar with Covid 19 journey times and then journeys were stopped altogether. So from a lead-in point of view yeah the two of them would have had different effects . Supply of the marble, delivery of the marble

Commented [DL1]: Brexit extended journey times and Covid lock downs transportation came to a halt

I- And did you identify any changes or adjustments to construction programs in the sourcing of marble during the COVID-19 and Brexit periods?

R- Yeah you would have to look for an extension based on the two items which could cause problems if you were halfway through a contract and there was no facility within the contract for these two items, but a lot of the time clients were very amenable and understood the situation.

Commented [DL2]: Contractual difficulties if programme had to be extended

I- And roughly what kind of impact would you have seen on programmes in any of the projects you would have had marble on?

R- Well Covid 19 and the direct delays would have been whatever time with the shutdown but a couple of weeks either side of that shutdown would be demobilisation and remobilisation and Brexit would have had several weeks until the journey cause of the longer shipping time compared to transfer across land.

Commented [DL3]: Brexit delays due to longer shipping times

I- And Has Brexit and the COVID-19 pandemic helped or hindered your relationships with marble suppliers and end-user clients? Can you provide specific examples?

R- Possibly not everyone is getting on with Brexit now and Covid is essentially a thing of the past at this stage.

I- Very good and has the COVID-19 Pandemic/ Brexit affected your sourcing strategy concerning marble? Can you provide specific examples?

R-It would, it has affected it yeah when we are sourcing it the lead in times are critical and also we try and get it advanced of the lead in time so that it is sourced early rather than last minute or leaving it closer to the time that is required

Commented [DL4]: Forward planning to source the material

I- Can you discuss any changes in your company's supply chain brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Sorry say that again David

I- Can you discuss any changes in your company's supply chain I suppose brought about due to the effects of Brexit and the COVID-19 pandemic?

R- Yeah I mean Covid 19 you wouldn't have been overly conscious of how a flu pandemic would affect the supply of sources so obviously that is at the back of your mind now and if affects sight in the precautions that you have to take and all that. Brexit you have to be more conscious of materials that are ordered or being ordered or being specified and try and source similar or equally approved to get over the problem of Brexit.

Commented [DL5]: Similar products being sourced

I- How have these events affected the costs of sourcing and shipping marble?

R- It would have added to the cost of the marble due to the longer lead in/longer journey times

Commented [DL6]: Cost of marble increased due to longer lead in times

I- Has your company considered implementing any long-term strategic changes in sourcing marble due to Brexit and the Covid COVID-19 pandemic?

R- We haven't looked at that just yet but if marble becomes a big, specified item in future we will have too get our thinking caps on that one I am afraid

I- How do you see the future of marble sourcing in Ireland given these events?

R- I think the luxury market for marble will always be there as people, they will get marble , they will insist they get it, and there will be no alternatives.

I- Very good, I suppose what lessons have been learned that you think could be beneficial for future unexpected events or crises in terms of marble supply to the luxury commercial development sector in Ireland?

R-I think you are going to order it well in advance of when you actually need it and have it in the country rather than leave it to a later stage of the project

Commented [DL7]: Forward planning

I- Very good Tony, thanks for your time

R-Grand ok lovely stuff