A *Just Transition* for UK oil and gas workers? Re-employment after job loss

by
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Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Kirsty Lindsay Reoch Denyer, 14th June 2023

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Access to data collected for this study is subject to restrictions. Data contain information of a personal and sensitive nature, and are available upon reasonable request only.

Abstract

The UK's oil and gas industry is declining, in the context of net zero and depleting North Sea petroleum reserves. A '*Just Transition'* is needed for its highly skilled workforce, who face reduced employment opportunities as their industry declines. This study explores the reality of a *Just Transition* – operationalised as '*re-employment success*' (Wanberg, 2012, p377) – for workers experiencing job loss from the UK oil and gas industry. The study adopts the lens of structure and agency to understand the contextual and individual-level factors influencing their search for re-employment.

Data for this qualitative study were collected via 37 semi-structured interviews with UK oil and gas workers with experience of seeking work after job loss, and industry stakeholders; and analysed using template analysis and abductive reasoning techniques. Analysis identified structural features of the UK oil and gas industry that influence access to replacement work: its boom and bust nature; its status of decline, evolution and uncertainty; and its unique culture. Within this context, individual-level resources which can enable an individual to act with agency were identified. These agentic resources were categorised as health, coping and job search resources. The importance of maintaining mental health by 'managing the spiral' highlights a dynamic process which can put at risk the very agentic resources needed to navigate the search for re-employment.

Results were used to propose a model of acting with agency in the search for re-employment after job loss from the UK oil and gas industry. Findings were interpreted to mean that workers are not yet experiencing a *Just Transition*, due to low job security, lack of alternative employment opportunities and a lack of transition support. Achieving re-employment success is largely down to the individual worker, who requires a high level of agentic resources to cope with unemployment, and succeed in their search for work.

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Introduction

Governments worldwide aim to reduce harmful carbon emissions by reducing dependence on fossil fuels and increasing clean energy sources. The global 'clean', 'low carbon' or 'net zero' transition entails a shift away from reliance on fossil fuels, which generate high carbon emissions, towards the use of lower carbon energy sources such as renewable energy. This global low-carbon energy transition is complex, with multifaceted social, technical, and economic considerations (Grubler, 2012; Castrejon-Campos et al., 2020). Energy transitions are inherently social transitions (Miller & Richter, 2014), and the scale, speed, and complexity of the net zero transition risk leaving certain social groups at a disadvantage, including oil and gas workers (Carley & Konisky, 2020; Henry et al., 2020). Furthermore, analysis of previous energy transitions – including the swift and mismanaged decline of the UK's coal industry in the 1980s – indicates that effective management of the oil and gas workforce will be key to the success of the UK's net zero transition (Allen, 2012; Johnson et al., 2013; Miller & Richter, 2014). Therefore, this study focuses on the implications of the UK's declining oil and gas industry for its workforce. A fair, or 'just' transition, that leaves no-one 'behind', including fossil fuel workers, is urgently needed (Barry, 2019. p5). However, the reality of a *Just Transition* for workers facing job loss from UK oil and gas is unclear, and this thesis aims to provide empirical data on this important topic.

This introduction sets out the context of this PhD study: the UK energy sector, specifically the North Sea offshore oil and gas industry. It presents the historic and current status of the UK oil and gas industry, and its employment trends. This chapter then discusses the need for, aims, and objectives of the study, before presenting an outline of the thesis structure.

The United Kingdom (UK) possesses significant natural energy resources in the form of petroleum and renewable energies (OGUK, 2019a; Li et al., 2016; IEA, 2019). Oil and gas reserves in the UK Continental Shelf (UKCS), located largely under the North Sea and serviced principally from Aberdeenshire, have contributed materially to the UK economy since the discovery of giant oilfields in the 1960s and 70s (Kemp, 2012, 2019). However, oil and gas production levels have been declining since 1999 as giant oil fields reach maturity (Kemp, 2012; 2019).

This thesis defines the UK's oil and gas sector, or industry, as relating to upstream, offshore production. 'Upstream' refers to activities involved in the discovery and extraction of oil and gas, whereas 'downstream' refers to the fuel supply chain, including '*supply, distribution and marketing of oil products*' (DECC, 2014). Upstream production is particularly vulnerable to oil price volatility, whereas the downstream sector has more control over sale prices and inventory management (Kim & Choi, 2019). Since the downstream sector is largely dissociated from domestic energy extraction and is less dependent on oil price fluctuations, this thesis focuses on the UK's upstream oil and gas sector. As almost all hydrocarbons in the UK are extracted offshore, with only a fraction being extracted

onshore (BEIS, 2019), upstream oil and gas are effectively synonymous with the North Sea offshore oil and gas sector, or industry.

Net zero transition

The UK has emerged as a leading force in the net zero transition, with clean energy sources producing more electricity than fossil fuels since 2017 (IEA, 2019). The generation of low-carbon energy from the UK's significant renewable resources is increasing (Li et al., 2016). The nation's maritime energy resources (offshore wind, wave, and tidal energy) offer the greatest potential, but there are also resources for onshore wind and solar energy, hydropower, and bioenergy (Li et al., 2016). Thus, the country's energy production from domestic natural resources is evolving, with oil and gas declining and renewables rising (OGUK, 2019a).

This trend is, at least in theory, forecast to continue. In order to reduce carbon emissions and limit temperature rise to 1.5°C by 2050, up to 60% of the remaining global oil and gas reserves must remain unextracted (Welsby et al., 2021). Moreover, to achieve this target, oil and gas production must decrease by around 3% each year by 2050 (Welsby et al., 2021). Thus, most petroleum regions are expected to peak and begin to decline in the coming decade (Welsby et al., 2021). As part of COP26, the UK has committed to achieving net zero by 2050, limiting the temperature rise to 1.5° C (House of Commons Library, 2022). UK government initiatives such as the Offshore Wind Sector Deal (HM Government, 2019) contribute to this goal.

Supporting the offshore oil and gas sector to become more carbon-neutral is a key part of achieving net zero sustainably and fairly (BEIS & OGUK, 2021). The North Sea Transition Deal (NTSD), a partnership between the government and the offshore oil and gas sector that was launched in March 2021, aims to leverage the sector's potential to help reach net zero emissions (BEIS & OGUK, 2021). Its commitments include lowering carbon emissions from oil and gas production, increasing carbon capture and storage (CCS) and hydrogen production and driving local content, while also securing tens of thousands of good quality energy jobs across the UK (BEIS & OGUK, 2021).

However, in the short term, the UK's clean energy transition does not involve a straightforward or immediate transition from fossil fuel production to renewable energy. Indeed, just 23% of oil and gas companies surveyed by the Aberdeen and Grampian Chamber of Commerce in 2022 believe that COP26 commitments have accelerated the sector's net zero efforts (AGCC, 2022). A lack of progress towards phasing out fossil fuel production in the UK can be attributed to three reasons. Firstly, despite declining reserves and negative public opinion about fossil fuels (Just Stop Oil, 2022), the UK is still predominantly reliant on oil and gas. North Sea oil and gas provided 56% of the UK's energy requirements in 2021, and is anticipated to remain the largest contributor to the UK's energy mix for another decade (OEUK, 2022a).

Secondly, the UKCS is diverse and there remains significant potential for the discovery and production of new oil reserves in the future (House of Commons Scottish Affairs Committee, 2018). The industry has a clear objective of '*maximising economic recovery*' ('MER') from the remaining reserves in the UKCS (Kemp, 2019; Kemp & Stephen, 2017). Indeed, the UK government launched the 33rd offshore licensing round for rights to explore the North Sea in October 2022, aiming to encourage continued investment and exploration in the remaining UKCS reserves (NSTA, 2022a).

Thirdly, the continuing large profits made by oil and gas majors based in the UK such as BP and Shell suggest that, despite corporate rhetoric, little commercial incentive exists to prematurely wind down oil and gas production in favour of renewable energies (FT, 2023). For example, in 2023 BP backtracked on plans to reduce oil and gas production by 40% by 2030, reducing the target to 25%. This reflects a similar move in 2008 when BP responded to surging oil prices by giving up their 'Beyond Petroleum' clean energy strategy (FT, 2023).

However**,** the reality of physical North Sea oil and gas reserves means that the future of UK offshore oil and gas extraction must be characterised by decline. Only smaller petroleum fields remain to be discovered, which are technically more complex and costly to exploit (BEIS, 2019; Acheampong et al., 2021). Furthermore, while UKCS petroleum reserves are expected to contribute to the UK's energy mix even under net zero targets, new field developments may only be approved with a clear plan to offset emissions and an assessment of capacity for carbon storage (NSTA, 2022b). Thus, a recent survey of firms operating in UK oil and gas found that industry confidence in UKCS prospects is declining (AGCC, 2022). Ultimately, despite the current and continued predominance of North Sea oil and gas in the UK energy mix, the decline of production and extraction is foreseen over the coming decades (BEIS & OGUK, 2021).

The trajectory of the UK's oil and gas industry is not only characterised by long-term decline. The upstream oil and gas sector has a history of cycles of boom and bust tied to volatile oil prices, linked closely to geopolitical events (BEIS, 2019; Baffes et al., 2015). At the time of submitting this thesis, there is a global energy supply crisis. Russia's war on Ukraine has caused soaring prices, including the highest gas prices ever seen (IEA, 2022). Soaring energy prices are contributing to steep levels of inflation and rocketing consumer energy prices (OEUK, 2022a). The UK is in an extended recession and many are experiencing energy poverty and struggling to heat and power their homes (IEA, 2022). Increasingly reliant on energy imports, the UK faces an urgency to increase its energy supply security by boosting domestic sources of energy, including renewables and oil and gas (HM Government, 2022; OEUK, 2022a; FT, 2022a). With newly-announced windfall taxes on oil and gas companies, the UK is increasingly seen as a fiscally unstable regime for commercial oil and gas companies (FT, 2022b; FT, 2022c).

Therefore, like other resource-rich countries, the UK faces a '*triple bottom line*' challenge of balancing social and environmental priorities with economic ones (Heim, Vigneau & Kalyuzhnova, 2022, p1). However, just as geopolitical events have created an urgent need for more energy security in the UK, they have also rendered the nation increasingly unattractive to entities looking to invest and operate in offshore oil and gas.

In summary, declining physical petroleum reserves in the North Sea, a long-term decline forecast in oil and gas activity as net zero transition progresses, and crises in energy security and pricing mean that the UK energy mix is evolving. Domestic oil and gas production is, broadly, declining, and renewable energy production is rising; although this transition is not linear, and domestic oil and gas production is anticipated to remain a significant part of the UK energy mix for the next decade. In this uncertain climate, UK energy sector bodies and initiatives are putting increasing focus on helping the transition away from fossil fuels and towards renewables, including supporting the workforce to transition to alternative employment as oil and gas work declines (OPITO, 2018, 2019; OEUK, 2022a; TUC, 2019; *Just Transition* Commission, 2020a). This - the implications of the net zero transition for the workforce, and their experiences of maintaining employment as the industry evolves - forms the topic of this thesis. The remainder of this Introduction presents the history and current situation of the UK's oil and gas industry and its workforce, in order to contextualise this study's research topic; considers the impact of the current industry status on the workforce; and finally, presents an outline of this thesis.

A brief history of energy production from fossil fuels in the UK

The history of UK energy production is important to understand the shape of its upstream oil and gas industry today. Key developments in energy production from coal and oil and gas in the UK are presented here to contextualise this thesis.

Cheap, abundant coal was discovered in England in the 15th century and overtook wood and peat to become the UK's primary energy source in the 16th century (Fouquet, 2009). By the 17th century, the UK coal industry had developed into a major industry in North-East England and remained the UK's primary source of energy until the 20th century, peaking just before World War I (Fouquet, 2009; Beatty et al., 2019). Following World Wars I and II, as the use of oil was growing, government intervention to revive the flagging coal industry was taken in the form of the National Coal Board (Gordon, 2009). However, the industry continued to decline and the miners' strike of 1984–6, which aimed to prevent coal mine closures, failed (Beatty et al., 2019). In 1987, the National Coal Board was privatised as the British Coal Corporation, and left by the government to fend for itself, after which the coal industry contracted sharply (Gordon, 2009). Thousands of jobs were lost, and coal-dependent regions in Northern England, Scotland, and Wales were plunged into poverty (Beatty et al., 2019). Former coal-mining communities are still suffering today from the decline of the coal industry,

with economic deterioration, poor employment rates, and long-term health risks to former workers (Beatty et al., 2019).

Lessons must be learned from previous energy transitions, particularly the social consequences of the rapid decline of the UK's coal industry (Johnson et al., 2013; Allen, 2012; Grubler, 2012), and the social implications of the UK's rapid and problematic transition from coal are referenced at various points throughout this thesis.

Oil was discovered onshore in small volumes in Scotland in 1851, and natural gas onshore in England in 1896 (UKOOG, 2022). However, before WWI, Britain largely imported its oil and gas (UKOOG, 2022). Attention to domestic oil and gas production increased from the early 20th century. Huge increases in oil requirements caused by World War II created the imperative to produce more energy from domestic natural resources, and the energy potential of Britain's geology attracted increasing interest (UKOOG, 2022; Kemp, 2012). The first Petroleum Production Rights Acts were passed in 1934, resulting in further, relatively small onshore discoveries (Kemp, 2012). However, the discovery of vast petroleum reserves on the UKCS did not happen until the 1960s, in one of the most important economic events for Britain since WWII (Kemp, 2012). The government passed the Continental Shelf Act in 1964, which established offshore jurisdictions and opened up the continental shelf to exploration (Kemp, 2012). Offshore exploration was seen as highly risky: with no petroleum discoveries previously made in the North Sea, the odds of finding oil or gas in commercial quantities were estimated at 30 to 1, for £1m per well (Kemp, 2012). With the limited investment and appetite for risk of British companies, most of the first licences were awarded to American companies (Kemp, 2012). In 1965, the first deposit of petroleum in the North Sea was discovered by BP, who struck gas in what would become the southern gas basin of the North Sea, followed by three major discoveries the following year (Kemp, 2012).

In 1967, Shell and BP started drilling in the northern North Sea. Bad weather conditions in the North Sea made this very challenging and different from the southern North Sea (Mackie, 2004). Exploration efforts required sophisticated technological innovation and the imported American expertise of skilled workers experienced in offshore drilling in California – although even they struggled with the North Sea conditions (Kemp, 2012; Mackie, 2004; Shepherd, 2015). In 1969, Amoco found the first significant oil field in the UKCS, Montrose, followed swiftly by the discovery of the giant oilfields Forties, Brent, Piper, and Ninian in the early 1970s (Kemp, 2012; 2019). Production activity grew rapidly during the 1970s as giant oilfields came onstream: the North Sea had 11 rigs in 1972, and 39 by 1973 (Mackie, 2004). By 1977, more than one million barrels of oil a day were being produced by the UKCS (Mackie, 2004). During the 1980s, the government and oil companies alike began to reap the rewards of the UKCS. In 1981, the UK became a net exporter of energy for the first time; and in 1982, the oil and gas industry's contribution to GDP reached 10.4%

(BEIS & ONS, 2021). 1985 saw production levels hit 2.6 million barrels of oil equivalent per day (boe/d) (Mackie, 2004).

The 1980s were also a time of development for the social landscape of the UK oil and gas industry. Three key events shaped the offshore oil and gas sector's culture as it is known today. The British National Oil Company – created to increase domestic energy security after the oil price spike of 1973 – was privatised by Margaret Thatcher's Conservative government in 1985, removing government influence from UKCS petroleum, which was left almost entirely in the control of commercial companies (Kemp, 2012; Boué & Wright, 2010). The 1986 oil price crash created a new awareness of the risk of industry downturns, and companies ushered in a new era of business management and cost control practices (Mackie, 2004). In 1988, health and safety failings led to the Piper Alpha tragedy, when 167 lives were lost in one of the worst-ever offshore accidents. As a result, the 1992 Offshore Safety Act was passed, requiring significant investment in new infrastructure from the oil companies (Mackie, 2004), and the offshore workforce was finally unionised (Woolfson & Beck, 2004). Health and safety remain a key focus of the industry today (Acheampong & Kemp, 2022).

Thus, by the end of the 1980s, production was booming, and the culture of the UK's offshore oil and gas sector increasingly resembled the industry today, characterised by profit-focused commercial companies, cost-controlling business management practices, and health and safety.

Exploration efforts on the UKCS peaked in 1990 when high oil prices encouraged investment and record numbers of exploration and appraisal wells were drilled (Kemp & Kasim, 2006; Kemp, 2019). Production remained strong throughout the 1990s and peaked at around 5.4 million boe/d in 1999 (Kemp, 2019).

Today, the UKCS is a mature hydrocarbon province (Kemp 2019). Although UKCS oil and gas remains the country's largest source of energy, production has fallen by two-thirds since its peak in 1999 (OEUK, 2022a; Kemp 2019) and UK oil revenues have decreased significantly over the last decade (HMRC, 2022). The first generation of giant oilfields has reached maturity, and recently discovered fields are smaller in size and therefore more complex and costly to exploit (Acheampong et al., 2021). Fewer exploration, appraisal, and development wells are being drilled and the average size of new fields discovered, and overall production levels, are declining (Kemp, 2019). Costs per unit are rising, while total industry expenditure on capital, operating, and development costs is declining (Kemp, 2019). Having become a net energy exporter in 1981 as North Sea oil and gas grew, the UK reverted to being a net energy importer in 2004 (BEIS & ONS, 2021).

The rise and fall of the UK oil and gas industry have not been linear: fluctuations in oil prices lead to semi-regular periods of boom and bust in industry activity. Employment has reflected the sector's upturns and downturns. Indeed, the prevalence of insecure contract work in upstream oil and gas is

described by Mackie (2004) as a key feature of offshore work since the first drilling platforms were set up in the 1960s.

The infamous 1986 price crash had severe consequences for employment, with thousands of workers abandoning Aberdeenshire, their homes, and mortgages, creating a property crisis (Mackie, 2004). More recently, the 21st century has already seen several price shocks, with swift and severe consequences for employment. Reflecting declining exploration and production, industry activity had been on a gradual decline when oil prices crashed during the 2008 financial crisis. An exceptional oil price rise between 2009 and 2014, as the economy recovered from recession, boosted growth in investment and employment, with a record number of oilfields developed during this time (Oil & Gas UK, 2018; Kemp, 2019; Baffes et al., 2015). However, oil prices plunged again in 2014 in the worst crash since 1986 (Baffes et al., 2015; Kemp, 2019).

The price crash of 2014 had severe ramifications for industry activity and employment, with unprecedented levels of job loss (Shepherd, 2015). The number of exploration wells drilled plummeted and has remained relatively low since (Kemp, 2019), with expenditure on upstream exploration halving from £29.3bn in 2014 to £14.3bn in 2018 (BEIS, 2019). As a result of reduced activity, employment plunged from its peak of 464,000 direct, indirect, and induced jobs in 2014, with an estimated 130,000 jobs lost in the UK (House of Commons Scottish Affairs Committee, 2018; OGUK, 2019b). Employment continued to decline from 2014 to 2017, after which the decrease plateaued (OGUK, 2021b).

By early 2019, a partial recovery of the industry was predicted, as levels of capital investment and drilling activity increased (OGUK, 2019a). However, the second oil price shock of the 21st century occurred in early 2020, triggered by the Covid-19 pandemic (IEA, 2020). The UK oil and gas industry was badly impacted (OGUK, 2020; OGUK, 2021a). Around £3bn of projected expenditure was deferred from 2020 and 2021, with recovery estimated at around two to three years (OGUK, 2021a). An estimated 34,000 direct and indirect jobs were lost in the UK oil and gas industry in 2020 alone, a 23% increase on 2019 levels (OGUK, 2021b). Despite the industry's semi-regular downturns, the devastation of the Covid-19 downturn, combined with net zero efforts and declining resources, was unprecedented (OGUK, 2021b).

Green shoots have started to appear post-pandemic. The number of workers travelling offshore had returned to pre-lockdown levels by June 2021 (OGUK, 2021b). Short term, the future is bright: 69% of companies expect both revenues and headcount to rise in 2022 (AGCC, 2022). However, in the longer term, offshore oil and gas sector activity is expected to continue to decline (BEIS & OGUK, 2021).

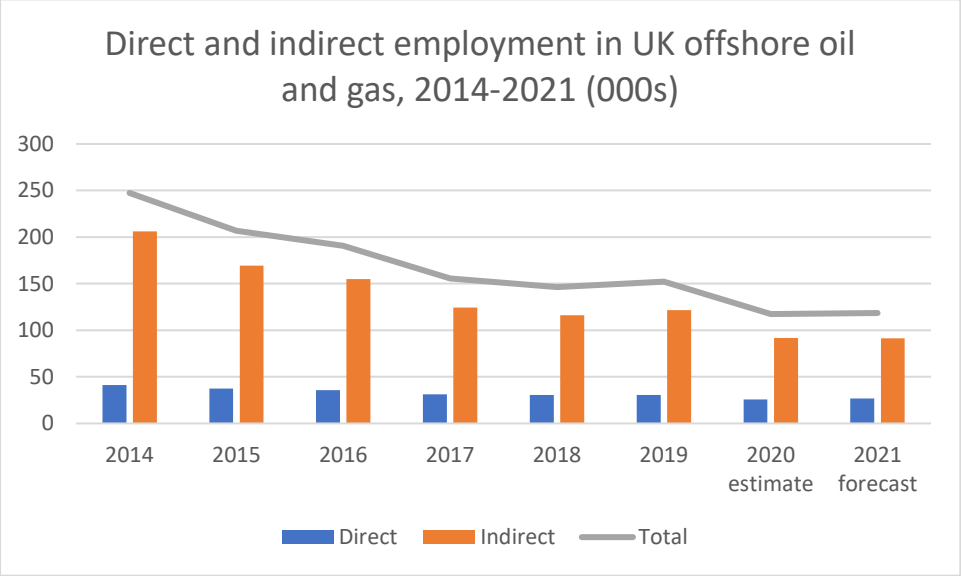
Current and future employment in UK upstream oil and gas

Oil and gas employment is concentrated in North East Scotland: 39% of all sector jobs (direct, indirect, and induced) are there, by far the highest concentration of energy jobs in any area of the UK (Oil & Gas UK, 2018; OGUK, 2021b). It is widely acknowledged that oil and gas are a key part of Aberdeen's economy and influence the area's overall employment (Oil & Gas UK, 2018). Ten percent of the city's workers are employed in oil and gas (BEIS & OGUK, 2021). Outside of Scotland, London and South-East England comprise the second largest number of jobs supported by the industry (21%), largely due to the prevalence of professional services firms and specialist engineering companies based in these areas (Oil & Gas UK, 2018; OGUK, 2021b).

Employment in UK oil and gas is declining. Figure 1 displays direct and indirect employment in the UK offshore oil and gas industry since 2014, the year that saw the worst oil price crash since the 1980s. Total direct and indirect employment in 2021 was estimated at 118,400, less than half of the 247,400 direct and direct jobs in 2014 (OGUK, 2021b). Turning to the future, in the short term, the vast majority (89%) of oil and gas employers expect that core and contractor headcounts are widely expected to stay level or increase until 2025 (AGCC, 2022). However, in the longer term, the downward trend in employment is expected to continue, reflecting industry activity: direct and indirect jobs are expected to decline to around 105,000 direct and indirect jobs forecast by 2030 (BEIS & OGUK, 2021).

The UK's oil and gas industry has long been characterised by low job security. As early as the 1970s, Mackie (2004) describes the prevalence of contract workers losing employment during the industry's semi-regular downturns due to plummeting oil prices. Low job security still pervades the global oil and gas industry today (GETI, 2021; Miliken & Lindner, 2023) and job losses have contributed significantly to the recent decline in total industry employment. In years following the 2014 price crash, which had a particularly extended impact, an estimated 70,000 jobs were lost in Scotland, and 130,000 jobs lost in the UK (House of Commons Scottish Affairs Committee, 2018). Subsequently, the Covid downturn of 2020 prompted a decrease of 34,000 direct and indirect jobs compared to before the pandemic: UK Offshore Oil and Gas industry is estimated to have supported 117,400 direct and indirect jobs in the UK, a reduction of 23% on 2019 levels. OGUK (2021b) ascribes this drop to job losses, caused by lower investment and activity.

Figure 1: UK offshore oil and gas: direct and indirect employment, 2014–2021 (000s)



Source: OGUK, 2021b; Oil and Gas UK, 2018

Oil and gas extraction work is highly skilled (Allan & Ross, 2019). Therefore, careful planning is necessary to provide quality replacement work as employment in the UK's offshore oil and gas sector declines. Oil and gas skills are seen to be widely transferable as the energy sector pivots towards lower carbon production. (RGU ETI, 2021). Therefore, various alternative employment opportunities exist in which oil and gas workers could utilise their existing skills.

Decommissioning obsolete oil and gas wells and infrastructure offers an alternative source of activity and employment, and activity is increasing significantly (Kemp & Stephen, 2019; OEUK, 2022b). However, expenditure on decommissioning is low compared to extraction and production work; and, as exploration and production continue to decline, so too will the need for decommissioning (Kemp & Stephen, 2019). Fracking of onshore resources offers another potential opportunity, although this controversial practice is not anticipated to lead to enough job creation to offset the volume of job loss in oil and gas (House of Commons Scottish Affairs Committee, 2018).

Renewable energies offer the most significant opportunity for alternative work. The British government has joined 52 other countries in committing to creating quality jobs to replace those lost due to net zero efforts (House of Commons Library, 2022). Net job creation of 40,000 direct and indirect roles in offshore energy is planned by 2030 (BEIS & OGUK, 2021; RGU ETI, 2021). 65% of jobs in offshore energy are expected to be in renewable energies by 2030, a significant increase from 20% in 2021 (RGU ETI, 2021)). The skills of the oil and gas workforce should be highly transferable to the evolved energy sector: around 90% of offshore oil and gas jobs are estimated to be transferable to renewable energies (RGU ETI, 2021). However, this is on the condition of the availability of

significant reskilling initiatives (OPITO, 2018, 2019). The Energy Skills Alliance, a collaboration between government, industry, trade unions, and academics, aims to create an '*all-energy*' career path, where workers can move agilely between different energy resources as required (AGCC, 2022, p21).

The scale, speed, and complexity of the net zero transition risk leaving certain groups at a disadvantage, including highly skilled fossil fuel workers, and there are growing calls for a 'just' transition, that leaves no one behind (Barry, 2019). For oil and gas workers, the mere creation of replacement jobs to replace declining fossil fuel employment does not in itself create a 'just' transition as the quality, nature, location, and security of the replacement jobs also need to be considered (UNFCCC, 2015; Healy & Barry, 2017; García-García et al., 2020; Harrahill & Douglas, 2018). Therefore,-trade unions have called for a fair, or 'just' transition for the oil and gas workforce, involving access to funding for reskilling, and access to good quality work to replace jobs lost (TUC, 2019).

There have been notable governmental and industry initiatives that work towards achieving these goals, in both Scotland and the rest of the UK (Krawchenko & Gordon, 2022). The Scottish government is a pioneer in taking proactive steps to understand and achieve justice for individuals and communities impacted by the net zero transition. The Scottish government's *Just Transition* Commission, formed in 2020 and renewed in 2022, aims to support the UK government in

> '*designing policies in a way that ensures the benefits of climate change action are shared widely, while the costs do not unfairly burden those least able to pay, or whose livelihoods are directly or indirectly at risk as the economy shifts and changes*' (*Just Transition* Commission, 2020a).

Scotland's *Just Transition* Commission has a wide-ranging focus on consumers, rural communities, and lowering carbon emissions, as well as the fossil fuel workforce. Its reports highlight the need for support to help the oil and gas industry manage this transition in a way that supports its workforce, the need for government to provide economic support for displaced workers, and the current high risk to the creation of a *Just Transition* for oil and gas workers (*Just Transition* Commission, 2020a, b; 2021; 2022). However, the commission's recommendations remain largely normative, and the actual reality of its goals, and the action taken so far to achieve them, are not clear; despite its calls for urgency in a recent report (*Just Transition* Commission, 2022).

This study

To summarise this Introduction, the UK's upstream oil and gas sector has been a significant contributor to the UK's economy and energy mix since the discovery of UKCS petroleum in the 1960s. Today, it is a mature hydrocarbon region and industry activity is declining, largely due to

declining North Sea reserves and efforts towards net zero carbon emissions. This decline is not linear; North Sea oil and gas will continue to make up a significant proportion of the UK energy mix until approximately 2030. Furthermore, upstream oil and gas is cyclical, and it experiences upturns and downturns linked to oil prices. However, in the long term, activity and employment in UK oil and gas are declining. This raises the question of what the decline of North Sea oil and gas means for its highly skilled workforce. In the UK, governments, trade unions, industry and academia have recognised the need for a 'just' transition for oil and gas workers impacted by net zero efforts, including good quality replacement jobs. There are various initiatives in aid of this, including the UK government's North Sea Transition Deal and the Scottish government's *Just Transition* Commission. However, the reality of a *Just Transition* as experienced by workers displaced from the UK's oil and gas sector is far from clear.

Therefore, the overarching research aim of this thesis is to explore the reality of a *Just Transition* for UK oil and gas workers. The study focuses on the experience of the individual worker and the factors involved in their search for successful re-employment. In this thesis, justice is explored using Sen's (2009) capability approach, which considers justice for each individual to be the capability to pursue the goals they want to; and to have freedom of choice over those goals. A *Just Transition* for displaced UK oil and gas workers is operationalised as '*re-employment success*': '*finding work quickly and/or finding a good job (i.e., with satisfactory wages, benefits, and commute time, which fits with the individual's interests or skills, etc.)*' (Wanberg, 2012, p377). That is, the thesis considers that a *Just Transition* for displaced oil and gas workers is constituted by access to good quality replacement work, chosen by the individual and in line with their skillset and personal interests, relatively soon after job loss. The study's approach to justice, and its operationalisation of the *Just Transition* construct, are justified in detail in Chapter 1.

In the search for quality re-employment, the study recognises the role of both the individual and the surrounding industry context. Therefore, following the precedent of a small group of studies exploring job loss from extractive industries (Gardiner et al., 2009; Snell et al., 2015; Strangleman, 2001), the sociological lens of 'structure' and 'agency' is used to view this problem. 'Structure' refers to the social and economic context of UK oil and gas. Exploring structure is critical to understanding the experience of the individual within that context. 'Agency' is used to refer to the capability of the individual to influence the surrounding social and economic context, and to gain access to replacement employment. The study adopts an Archerian, morphogenetic approach to structure and agency, which enables analysis of the one-way influence of structure on agency. These decisions and definitions are described and justified in Chapter 2.

The study addresses two research questions. A qualitative methodology is adopted to address these research questions, which are complex and social in nature.

1. *What structural factors influence access to re-employment success for workers displaced from the UK's oil and gas sector?*
2. *In this context, what factors enable individuals to exercise agency in their search for re-employment?*

Thus, this study aims to identify and describe the 'structural' and 'agentic' factors that influence successful access to re-employment for UK oil and gas workers facing job loss and unemployment, and to explain how these factors work together to result in access to re-employment.

This study aims to contribute to a gap in the *Just Transition* research. Much of the literature that is relevant to a *Just Transition* for fossil fuel workers consists of normative proposals for interventions and there is a need for more empirical studies based on reality (Wang & Lo, 2021). Various authors have called for more exploratory, qualitative research on the experiences of a *Just Transition* for fossil fuel workers (e.g. Pai et al., 2020; Harrahill & Douglas, 2019; García-García et al., 2020). This study aims to contribute to the small body of qualitative research that gives voice to fossil fuel workers about their perceptions of the energy transition (e.g. Cha, 2020; Carley et al., 2018). Specifically, this study follows the precedent of studies exploring fossil fuel workers' and communities' practical experience of the energy transition (e.g. Olson-Hazboun, 2018; Graff et al., 2018; Banerjee & Schuitema, 2022; Cha et al., 2022; MacNeil & Beauman, 2022). This field of literature is analysed in Chapter 1.

This study aims to contribute to this small body of qualitative research by giving voice to North Sea oil and gas workers. To the author's knowledge, it is the first study to gather data from this group about their experiences of a *Just Transition*, and their practical experiences of finding replacement work after job loss. A body of empirical research on UK oil and gas workers exists, but most studies focus on health and safety; for example, mental health and stress (Parkes, 1992; Sutherland & Cooper, 1996) and the health impact of offshore working patterns (Parkes, 2015; Parkes, 2012). However, no recent studies have explored their experiences of the net zero transition.

Thesis overview

This introduction has presented the context of the study: the current state of the UK's cyclical, evolving, and ultimately declining upstream oil and gas industry, its unique history since the discovery of North Sea petroleum in the 1960s, and current and future employment in the sector. It has also introduced the research problem and provided a brief overview of the study's approach, its real-world value, and the research gap it addresses.

The main thesis is presented in five chapters. Chapter 1 discusses the academic literature on the increasingly important *Just Transition* construct, a fast-growing area of literature. It introduces the origins of the *Just Transition* construct, then reviews literature that is relevant to a *Just Transition* for

fossil fuel workers, highlighting the need for qualitative research that gives voice to UK oil and gas workers as their industry declines. It also introduces and justifies the study's approach to justice, using Sen's (2009) capability approach; and its operationalisation of the *Just Transition* for individual workers as re-employment success (Wanberg, 2012). Chapter 2 introduces the lens of structure and agency used to view the process displaced oil and gas workers undergo to find re-employment. It then presents literature on re-employment and the energy transition, which delineates the structural and agentic factors that may help or hinder displaced workers in their search for replacement work. For example, relevant structural factors include job availability and human capital, and agentic factors include psychological and practical resources. Chapter 3 documents the study's key methodological decisions and details of the research process, including the study's pragmatist philosophy. Data collection took place via 24 semi-structured interviews with oil and gas workers with experience in seeking work after job loss, and a further 13 interviews were conducted with industry stakeholders. The data were analysed using template analysis and abductive reasoning techniques.

Chapter 4 presents the study's findings and the themes generated by the process of template and abductive analysis. In line with the study's research questions, these themes are organised into categories of structural features of the UK oil and gas industry, agentic resources, and 'luck, time, and demographics'. Chapter 4 then uses the findings to propose a model of what it takes to act with agency when seeking re-employment after job loss in the UK's oil and gas industry. This is based on the metaphor of climbing a mountain to achieve re-employment, an analogy used by one participant in describing their experiences. Chapter 5 presents a discussion of these findings in relation to the relevant literature. Finally, conclusions and recommendations based on the study's results are proposed. The conclusion presents a summary of the thesis, highlighting the study's contributions to the academic literature and practical implications. Limitations of the study's design and results are acknowledged before recommendations for future research based on the study's results are proposed.

Chapter 1: *A Just Transition* for fossil fuel workers: a literature review

The scale, speed, and complexity of the net zero transition risk leave certain groups at a disadvantage, including fossil fuel workers (Carley & Konisky, 2020). A *Just Transition* that leaves no one 'behind' is needed (Barry, 2019, p5). In the UK, the highly-skilled oil and gas workforce faces declining employment prospects as the upstream oil and gas sector continues to decline. However, despite promising commitments to help displaced workers quality replacement work (e.g. BEIS & OGUK, 2021), the reality of a *Just Transition* for UK oil and gas workers is not clear. This chapter begins by introducing the concept of the *Just Transition*, presenting a review of this fast-growing field of literature; and defining the study's approach to justice, drawing on the approach proposed by Amartya Sen (2009). The chapter then focuses on research relevant to the fossil fuel workforce, analysing *Just Transition* interventions for workers and literature that gives voice to the fossil fuel workforce via trade unions and qualitative research. The chapter concludes by proposing a definition of a *Just Transition* for displaced oil and gas workers as 're-employment success'.

1.1 *Just Transition*: origins and overview

Energy justice is an important and growing field of research. It applies the principles of justice to energy policy, focusing on energy insecurity and equality of access to affordable, sustainable for all (Jenkins et al., 2016; Carley & Konisky, 2020). For Sovacool & Dworkin (2014, p13) '*an energy-just world would be one that promotes happiness, welfare, freedom, equity and due process for both producers and consumers'*. Meanwhile, energy transition literature pertains to the global clean, low carbon or net zero transition: the shift away from reliance on fossil fuels generating high carbon emissions in favour of lower carbon energy sources such as renewable energy (Carley & Konisky, 2020).

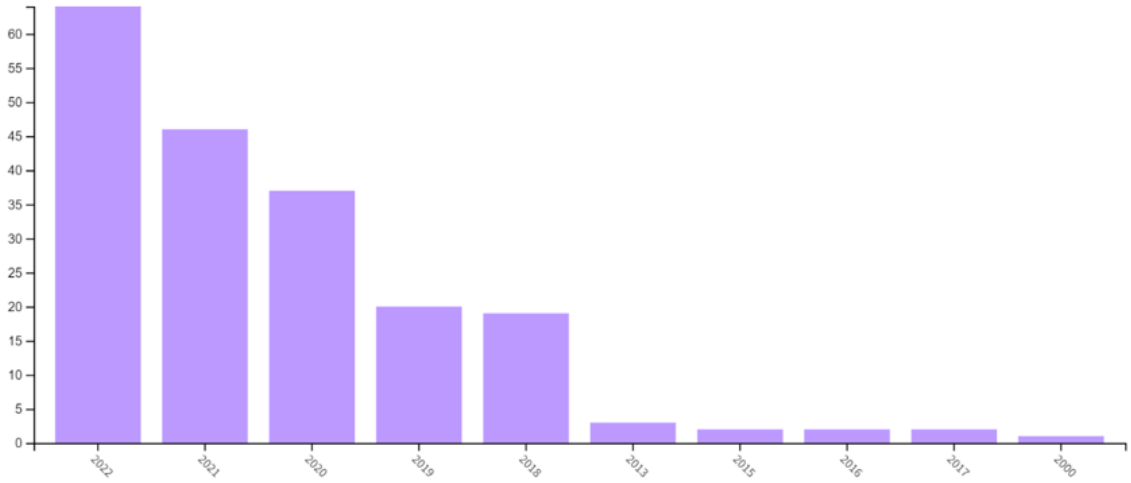
The construct of a *Just Transition* lies where the concepts of energy transition and energy justice overlap (Carley & Konisky 2020). A *Just Transition* is concerned with promoting fairness and justice as the net zero transition progresses. It has been defined as '*a fair and equitable process of moving towards a post-carbon society*' (McCauley & Heffron, 2018, p2). The need for a *Just Transition* is driven by social inequality (Velicu & Barca, 2020). *Just Transition* efforts aim to ensure that nobody is '*left behind*' as the net zero transition progresses (Barry, 2019, p5). Thus, if the 'net zero transition' is about reducing carbon emissions, then the *Just Transition* is about ensuring this is achieved in a way that promotes social justice for those impacted.

The term '*Just Transition*' was coined by North American trade union movements in the 1970s, in support of workers in natural resource industries whose jobs were impacted by new government regulations (Healy & Barry, 2017; McCauley & Heffron, 2018). The construct has gained traction in policy and academia in recent years following its explicit inclusion in the 2015 Paris Agreement, whose introduction emphasised '*the imperative of a Just Transition of the workforce and the creation*

of decent work and quality jobs' (UNFCCC, 2015,p 21; Morena, 2018). The use of the term '*Just Transition*' has expanded from its trade union roots and original purpose for the fossil fuel workforce. From its trade union beginnings, the *Just Transition* construct has evolved into a global term, used for any group or community facing potential adversity in the energy transition (Barry, 2019; Carley & Konisky, 2020; García-García et al., 2020; Wang & Lo, 2021). Research on this growing construct involves asking questions about '*who wins, who loses, how and why as they relate to the existing distribution of energy…. And who will bear the social costs of decarbonizing energy sources and economies'* (Newell & Mulvaney, 2013, p2).

Academic interest in the *Just Transition* has risen steeply since 2018, as shown in Figure 2. Reflecting its broadened scope, the *Just Transition* literature comprises various discourses (Wilgosh et al., 2022; Wang & Lo, 2021). Energy use, pricing and poverty are particularly significant areas of *Just Transition* literature (Kelly et al., 2020; Burgess & Whitehead, 2020). Other significant *Just Transition* discourses include public perceptions of the net zero transition (e.g., Crowe & Li, 2022), community initiatives to drive forward decentralised, local smart energy management (e.g., Coy et al., 2022), financing a *Just Transition* (e.g., Zadek, 2019), gender inequality (e.g., Allwood, 2020; Mohr, 2021; Walk et al., 2021) and, at a global level, highlighting fossil fuel-dependent countries that may be at a disadvantage in the energy transition (e.g., Draeger et al., 2022). The construct has been internationally adopted, with research from all over the world: Europe (e.g., Kolde & Wagner, 2022; Pianta & Lucchese, 2020), Asia (e.g., Sharpe & Martinez-Fernandez, 2021), Australia (e.g., Della Bosca & Gillespie, 2018), North America (e.g., Cha & Pastor, 2022), South America (e.g., Pucheta et al., 2021), Africa (e.g., Oyewo et al., 2021) and the Arctic (McCauley et al., 2022).

Figure 2: Number of academic publications including '*Just Transition*' in the title by year, 2000-2022



Source: Web of Science Core Collection, search for publications with 'Just Transition' in the title, conducted 3 November 2022

While recognising the value of broadening the scope of the *Just Transition* to encompass all communities impacted, this thesis focuses instead on the original meaning of the term: a fair transition for fossil fuel workers, as their employment opportunities decline. This is because creating a *Just Transition* for fossil fuel workers remains a key aspiration of the broadening *Just Transition* concept (Healy & Barry, 2017; Morena, 2018). Literature reviews on the evolving concept of a *Just Transition* have identified work and employment as a continuing key theme in global research (García-García et al., 2020; Wang & Lo, 2021; Pai et al., 2020; Carley & Konisky, 2020). In the UK, supporting the highly skilled North Sea oil and gas workforce is a key focus of *Just Transition* efforts in Scotland (*Just Transition* Commission, 2020a,b). However, no previously published empirical research has given voice to the UK oil and gas workforce to understand their experiences of the changing industry.

Even in light of growing academic interest in the *Just Transition* concept, more empirical research on the topic of a *Just Transition* is needed (Wang & Lo, 2021). In particular, despite international rhetoric on the importance of a *Just Transition*, a lack of consensus and clarity remains about what a *Just Transition* is, how to achieve it, and what progress, if any, has been made so far (Henry, Bazilian & Markuson, 2020). It is action, not rhetoric, that will create a difference for communities adversely impacted by the energy transition, and so far, tangible action is lacking (Gueye, 2022). Therefore, this PhD thesis has been carried out in the spirit of creating tangible proposals for action to create a *Just Transition* for UK oil and gas workers.

1.2 This study's approach to justice: Sen's (2009) capability approach

The ambition of a *Just Transition* is backed by the International Labour Organization (ILO), national and international governments and trade union bodies (e.g., *Just Transition* Commission, 2022; TUC, 2019). However, the construct has been critiqued as nebulous, vague and open to interpretation (Snell, 2018; Morena, 2018; Wang & Lo, 2021). Thus, the *Just Transition* must be operationalised with more clarity in academic research to improve the value of research efforts. An important place to start is the study's approach to justice.

In order to clarify the study's approach to studying a *Just Transition* for UK oil and gas workers, the underlying approach to justice must be explored. Philosophical interest in justice dates back to Ancient Greece, with many different perspectives on justice having been developed since (Sovacool & Dworkin, 2014). Justice is a multifaceted concept, and there is no one defining definition that can fully capture its significance across all situations (Sovacool & Dworkin, 2014). Similarly, the meaning of a 'just' transition is variable and context-specific, with justice taking on different forms depending on who the justice is for and what the situation is (Barnes, 2022; Wang & Lo, 2021).

Therefore, different perspectives, highlighting different social priorities, can be used as lenses through which to view certain problems (Sovacool & Dworkin, 2014). This study's selected approach to justice derives from Sen's (2009) capability approach. There is little discussion of theories of justice

in the growing number of journal papers published on the *Just Transition*. However, there is a small precedent for using Sen's (2009) ideas on justice to expand on the impact of the energy transition on the labour market in fossil fuel communities, e.g. Janikowska & Kulczycka's (2021) qualitative study of a Polish coal mining community.

The definition of a *Just Transition* emphasizes the importance of fairness and equity (McCauley & Heffron, 2018). More specifically for workers in declining fossil fuel industries, the 2015 Paris Agreement highlights that a *Just Transition* for workers entails access to good quality employment (UNFCCC, 2015; Morena, 2018). For UK oil and gas workers experiencing loss, therefore, justice is interpreted as access to quality work: that is, the equivalent of what they have lost. Therefore, a *Just Transition* for UK oil and gas workers is about promoting fairness via access to work of a similar quality to the work they had before job loss; and removing any injustice done to them through job loss.

Underlying this study's perspective on a *Just Transition* for UK oil and gas workers is Sen's (2009) capability approach to justice, which focuses on individual freedoms. While traditional social contract approaches to justice focus on identifying how to create a theoretical perfectly just society, Sen's approach focuses more on incremental change in a real society. For example, a typical concern for Sen (2009) would be 'what steps could we take to make the UK's transition away from oil and gas less unjust for its workforce?'. Thus, rather than focusing on how ideally to organise social institutions such as education and healthcare, Sen's approach focuses evaluating justice and injustice in reality, at the level of the individual.

Sen (2009) observes that any theory of justice must identify its approach to measuring advantage and disadvantage; and, thereby, justice. To better understand Sen's perspective, two mainstream approaches to evaluating justice are first considered: social contract perspectives and utilitarianism. Social contract philosophers (for example, Thomas Hobbes, Immanuel Kant, and John Rawls) measure the distribution of tangible resources such as income or wealth to evaluate justice. However, for Sen, this approach is too narrow: analysis of financial measures focuses only on the means to create an enjoyable life, and cannot provide any information about the actual life lived (Sen, 2009).

For utilitarian justice scholars (e.g. Jeremy Bentham, John Stuart Mill), advantage is evaluated by the impact on one's happiness. For utilitarians, if happiness is maintained or enhanced, then justice has occurred; if happiness is reduced, then an injustice has occurred (Sen, 2009). However, for Sen (2009), this focus on happiness is again too narrow. While happiness is an important part of evaluating whether justice or injustice exists, it is not the only important outcome in evaluating one's quality of life. Furthermore, the utilitarian approach to justice is not congruent with this study's aims. Utilitarians view happiness at the level of a net outcome for society (Sovacool & Dworkin, 2014). Therefore, utilitarians would likely sacrifice the happiness of some oil and gas workers, who are

losing employment opportunities, in exchange for the net increased happiness of a society benefiting from cleaner air and lower carbon emissions.

Sen's (2009) freedom-focused capability approach sits in contrast to such approaches. It evaluates justice more widely than utilitarian and social contract perspectives, by considering the ability we have to create a life that we value. Sen (2009) uses two concepts to evaluate advantage, and therefore justice, at the level of the individual. The first concept Sen uses to evaluate justice is the capability one has to pursue goals that they value. The second is freedom to exercise choice about what those goals are, and how to pursue them. Therefore, this approach evaluates advantage by considering the capability that we have to create a life full of activities that we choose and value. The nuances of this approach reflect the complexities of an individual's life: for example, although someone may have a high income or material wealth, if they are in some way prevented from creating a life that they value – for instance, due to illness – then they can be seen as disadvantaged, and have been subjected to injustice (Sen, 2009).

Sen (2009, p19) defines capability as 'the power to do something', which he aligns with the freedom to pursue the goals we value in life. While Sen refrains from providing a definitive list of an individual's capabilities (Sovacool & Dworkin, 2014), he provides various examples and illustrations, including the capability to 'pursue one's work-related plans and ambitions' (Sen, 2009, p233). Thus, UK oil and gas worker's capability to pursue their chosen career and work opportunities can be considered as an important indicator of justice. Any constraint to their capability, or power, to access quality employment of their choosing to replace the work they have lost, could therefore be considered an injustice. For example, the negative impact of redundancy and unemployment on mental and physical health (McKee-Ryan et al.; Paul & Moser, 2009) could reduce an individual's capability to pursue the work they want to; and could therefore be considered an injustice.

Sen (2009) also advocates for individuals to have the freedom to choose between various options for themselves, and over how to pursue that chosen option; rather than having a choice forced upon them. Therefore, the justice afforded to UK oil and gas workers can also be evaluated by the freedom they have to choose what work to pursue, and any constraints to that freedom. For example, a hostile employment context with few job opportunities may reduce an individual's freedom to pursue quality work that they enjoy, by reducing available choices of occupation. Thus, with reduced capabilities and freedom of choice, such workers could be said to be suffering injustice, and therefore not benefiting from a *Just Transition*.

Notable, the *Just Transition* concept has been criticised for its focus on certain injustices while potentially creating others. For example, a global *Just Transition*, entailing reduced carbon emissions, poses an economic risk to developing economies more reliant on coal, such as China and India and therefore the wellbeing of the people in them (Heffron & McCauley, 2022; Muttitt & Kartha, 2020).

Similarly, creating renewable energy infrastructure to enable the production, storage and transmission of renewable energy requires significant increases in the extraction of different metals and minerals, creating social injustice for individuals living in other parts of the world (Bainton, Kemp et al. 2021). Thus, *Just Transition* efforts may do nothing more than shift injustice to different communities and geographies. However, inspired by Sen (2009), this study adopts the view that creating a more just world involves taking small steps to progress one specific issue. The small step taken towards promoting a *Just Transition* in this study is giving voice to UK oil and gas workers who have lost their jobs about their experiences of finding work again.

1.3 Interventions supporting UK oil and gas workers

A *Just Transition* will not happen in a vacuum (Barry, 2019). Purposive, proactive action must be taken to create justice for displaced oil and gas workers, particularly at a governmental level (White, 2020; Healy & Barry, 2017). Intervention to create a *Just Transition* for fossil fuel workers is a key theme in academic literature (Krawchenko & Gordon, 2021). Practical recommendations from *Just Transition* literature focus on policy and decision-making. They can be analysed using McCauley and Heffron's (2018) three key tenets of a *Just Transition* – distributional, procedural, and restorative justice[1] – which have been fairly widely adopted in the energy justice literature (e.g., Banerjee & Schuitema, 2022; Bray et al., 2022). The roots of these three tenets lie with various justice theorists, reflecting the value of a diversity of perspectives in addressing various issues of justice in the net zero transition (Sovacool & Dworkin, 2014).

Distributional justice refers to the '*fair distribution of the burdens and benefits of social cooperation among diverse persons with competing needs and claims*' (Kaufman, 2012, p842). That is, it pertains to the just distribution of material resources, power and opportunities (Rawls, 1971, cited in Sovacool & Dworkin, 2014). In the context of the *Just Transition*, distributional justice focuses on identifying and balancing the geographical and social spread of justice and injustice resulting from net zero efforts (Carley & Konisky, 2020). Procedural justice is about how decisions are made (Sovacool & Dworkin, 2014). In the context of the *Just Transition*, this addresses the processes required to engage impacted communities, give them a voice and ensure that they are treated fairly (Carley & Konisky, 2020). Restorative justice involves righting wrongs done to those already harmed by net zero efforts. (Carley & Konisky, 2020). For the *Just Transition*, this involves supporting and compensating workers for what they have lost due to job loss.

[1]Carley and Konisky (2020) and McCauley et al. (2013) both identify a fourth tenet, recognition justice. This relatively recent construct focuses on awareness of societal inequalities. It was not judged to be so relevant to oil and gas workers and so this thesis adheres only to McCauley and Heffron's tenets of distributional, procedural and restorative justice.

The first set of intervention recommendations aligns with the principle of distributional justice (McCauley & Heffron, 2018), which focus on identifying the geographical and social spread of injustice to ensure that the burden is spread equally and no one group is overly impacted. To achieve this, an organised approach should be taken to estimating and assessing the impact of transition. UNFCCC (2016) recommends early assessment of the impact of the transition on workers, specifically, both short-term and long-term employment impacts (Muttitt & Jartha, 2020; Zhang & Wang, 2018).

The largest area of intervention literature aligns with procedural justice principles (McCauley & Heffron, 2018), which seek to ensure that net zero decisions and processes are conducted for the benefit of those adversely affected. Five types of procedural justice interventions are identified in the *Just Transition* literature.

Firstly, several authors recommend long-term planning for a *Just Transition* (Galgoczi, 2020; Goddard & Farrelly, 2018; Pai et al., 2020). Longer-term planning should enable preparation for wider consequences, not just local ones (Oei et al., 2020; Goddard & Farrelly, 2018). This should involve clear and proactive communication of phasing-out plans to the workforce, for example, early notice of redundancies, if possible, years rather than months in advance (Evans & Phelan, 2016; Pai et al., 2020). This evokes learnings from the UK's rapid decline of the coal industry in the 20th century, which indicate that overly swift energy transitions can result in long-term social and economic harm (Beatty et al., 2019).

Secondly, based on the assessment of employment impact, policy setting should be proactive and interventionist, anticipating injustice before it occurs, as opposed to reactive policy aimed at restoring justice to those already harmed (Harrahill & Douglas, 2019; Afewerki & Karlsen, 2021; Krawchenko & Gordon, 2021; Healy & Barry, 2017; Goddard & Farrelly, 2018). Policies should include a focus on improving job quality and quantity (Pai et al., 2020; García-García et al., 2020).

Thirdly, policy decisions must involve at least a degree of worker influence (Abraham, 2017; Evans & Phelan, 2016; Harrahill & Douglas, 2019; Goddard & Farrelly, 2018). To create the opportunity for workers to influence decision-making, most authors advocate for social engagement, encouraging dialogue with impacted workers and communities (Abraham, 2017; Galgoczi, 2020; Evans & Phelan, 2016; Harrahill & Douglas, 2019; Mayer, 2018; Oei et al., 2020; Goddard & Farrelly, 2018; Pai et al., 2020; Evans and Phelan, 2016; Johnson et al., 2013). That is, there is great value in social dialogue and bottom-up decision-making, rather than new projects and industries being allocated to regions by the government without local consultation. For Oei al. (2020), dialogue should not be limited to local communities: decisions should also integrate advice from external sources such as academics to capitalise on different perspectives and expert advice. However, social dialogue may be aspirational and not a current reality. Cha et al.'s (2022) pioneering *Just Transition* Listening Project interviewed

over 100 stakeholders across the USA, including fossil fuel workers, finding that the voices of the people adversely impacted by the energy transition are not heard and advocating that more social dialogue be integrated into decision-making.

Fourthly, effective *Just Transition* policymaking will involve collaboration among the government, industry bodies and employers (Goddard & Farrelly, 2018). Krawchenko and Gordon (2021) clarify that a clear chain of accountability within such collaborations is critical, suggesting that Scotland's *Just Transition* Commission offers an accountability mechanism for North Sea oil and gas workers.

Fifthly, there should also be a rigorous post-intervention evaluation of achievements and learnings from *Just Transition* initiatives (UNFCCC, 2016).

The third set of intervention proposals focuses on restorative justice (McCauley & Heffron, 2018). Restorative justice focuses on compensating individuals and groups who have already been harmed by net zero efforts, such as oil and gas workers losing employment. For displaced oil and gas workers, restorative justice proposals involve supporting individuals who have lost their jobs. At the individual level, financial support should be available for workers, for example, pension security, reskilling funds and financial relocation support (Harrahill & Douglas, 2019; Green & Gambhir, 2020; Pollin & Calacci, 2019; Pai et al., 2020).

This economic support should be supplemented by social support, for example, retraining and reskilling initiatives, re-employment opportunities, worker transfer schemes, and support to relocate geographically if necessary (Harrahill & Douglas, 2019; Krawchenko & Gordon, 2021; Green & Gambhir, 2020; Oei et al. 2020; Pollin & Calacci, 2019, Evans & Phelan, 2016; Sharpe & Martinez-Fernandez; 2021; Pai et al., 2020).

Both economic and social support for workers should be flexible and adaptable in terms of resources to tailor the support to meet the needs of the impact group (Krawchenko & Gordon, 2021). For example, Evans and Phelan (2016) recommend that particular care be taken for older workers, who may be more vulnerable in a rapidly changing employment context.

However, a limitation displayed by most intervention studies is that they are normative, recommending interventions without evaluating their efficacy (Carley & Konisky, 2020). Afewerki and Karlsen (2021) are a notable exception in evaluating the success of the policy they review. Thus, empirical research on the reality of a *Just Transition*, as experienced by impacted groups, is needed to help inform further efforts.

1.4 Research giving voice to fossil fuel workers

Giving voice to impacted groups - enabling them to have their experiences heard and addressed - is a key part of procedural justice (McCauley & Heffron, 2018). Therefore, this section presents a review

of research giving voice to fossil fuel workers: collectively via trade unions, and as individual workers expressing their views via qualitative literature.

Collective voice via trade unions

Trade unions have been central to the *Just Transition* movement since its origins in the 1970s (Healy & Barry, 2017; McCauley & Heffron, 2018). In the current energy transition, trade unions are positioned to play a key role in galvanizing *Just Transition* efforts for energy workers in the current transition (Walsh, 2021; Healy & Barry, 2017; McCauley & Heffron, 2018; Stevis & Felli, 2015). Trade unions offer workers the opportunity to share their collective worker voice, amplifying individual voices (Goddard & Farrelly, 2018; Pai et al., 2020).

Several papers present analyses of current and historical union action and its contribution to the energy transition. Snell's (2018) analysis of a transitioning coal region in Australia argues that the role of trade unions is vital in applying the vague *Just Transition* concept to achieve practical outcomes for workers. Abraham (2017) presents case studies from Germany and the USA, demonstrating that coal miners have previously been able to increase the likelihood of a *Just Transition* by negotiated influence on industrial policy via unions. Arapostathis et al. (2013), analysing two UK gas transitions from the early and mid-20th century, conclude that although workers are individually weak, in aggregate they can exert agency on the transition via trade unions, a finding echoed by analyses of German electricity and coal transitions (Prinz & Pegels, 2018; Bößner, 2019). However, the potential level of agency exerted is low compared to the power of the private and public sectors (Arapostathis et al., 2013).

In summary, this literature suggests that trade unions can play a role in creating a *Just Transition*, by offering workers a platform to exert power collectively. However, the power of trade unions is relatively low compared to the power exerted by corporations and governments.

Further research indicates that trade union may encounter dilemmas in their *Just Transition* efforts. In the UK, Swennenhuis et al.'s (2020) interview study with Aberdeen stakeholders revealed concerns that it may be difficult to garner support from UK unions if transition efforts are seen to threaten existing fossil fuel jobs. Similarly, across the North Sea, Normann and Tellmann's (2021) analysis of Norwegian trade union hearings suggests that fossil fuel-related unions oppose petroleum phase-out movements and have advocated for continued exploration. Thus, trade unions may find the choice difficult when faced with policies that boost clean energy activity while phasing out fossil fuel work. Galgoczi's (2020) case study of the European energy sector suggests that unions must manage conflicting roles and responsibilities, both '*managing the consequences of change and, at the same time, pushing this change forwards*' (p372). This climate-versus-jobs dilemma is echoed by Thomas' (2021) qualitative analysis of factors shaping climate policies of international trade unions,

Tomassetti's (2021) analysis of the decarbonization of Italian industry and Greco's (2022) analysis of Southern Italian steel unions.

Therefore, trade unions face a complex challenge both in pushing the climate change agenda forward, and concurrently demanding protection for fossil fuel jobs.

Individual voice

Although collective voice may be louder and more powerful than individual voices, it is also important to hear the personal experiences of fossil fuel workers as their industry declines. A relatively small field of qualitative literature gives voice to fossil fuel workers, exploring their experiences of a *Just Transition*. The majority of empirical research on a *Just Transition* for fossil fuel workers is conducted on coal mining communities (Pai et al., 2020), although more recent studies have explored the views of broader groups of fossil fuel workers (e.g. Sicotte et al., 2022).

This field of literature demonstrates some evidence of positive perceptions of the energy transition amongst mining communities. For example, Carley et al. (2018) found that coal communities are proactively reshaping their identities, culture and opportunities to adapt to the energy transition. Harffman's (2021) qualitative study of a Wyoming coal town indicates that miners care about the environmental damage caused by fossil fuels and view the decline of coal as an opportunity to protect their valued landscape.

However, coal mining often provides a source of good quality, dignified work to local communities, who are at risk of poverty as the industry declines (Smith & Tidwell, 2016; Greenberg, 2018; Johnstone & Hielscher, 2017). Therefore, a more common theme is mining communities' negative perceptions of the energy transition, which evokes a jobs-versus-climate narrative (Kalt, 2021). For example, qualitative studies in Utah, USA (Olson-Hazboun, 2018), Appalachia, USA (Graff et al., 2018) and New South Wales, Australia (Roden, 2021) reveal that communities dependent on fossil fuels perceive the burgeoning renewable energy sector as a threat to the local economy and jobs.

Furthermore, coal-mining jobs are often passed down generationally, providing an important source of individual and collective identity (Carley & Konisky, 2020; Della Bosca & Gillespie, 2018; Mayer, 2018). Therefore, mining communities can experience a threat to their collective identity as the industry declines, creating resistance to the energy transition (Cha, 2020; Sanz-Hernandez, 2020; Della Bosca & Gillespie, 2018).

The findings of these studies raise questions about perceptions of the energy transition in the UK's declining oil and gas sector. For example, they suggest that concern for jobs and the economy, and the potential loss of identity associated with this unique industry, may create resistance to growing renewables sectors. This may be particularly evident in Aberdeenshire, which has a high proportion of oil and gas employment (BEIS & OGUK, 2021).

A more recent group of studies use interview data to explore fossil fuel workers' experiences of practical *Just Transition* efforts and decision-making. These studies highlight scepticism about the tangible impact of proposed *Just Transition* initiatives. This is the case amongst Irish peat workers (Banerjee & Schuitema, 2022); US energy workers and trade unions leaders (Sicotte et al., 2022); and Eastern Australian mining communities (MacNeil & Beauman, 2022). For example, Banerjee and Schuitema (2022) highlight the lack of promised training opportunities and access to replacement employment.

These studies recommend that workers are given a say in *Just Transition* efforts, to ensure that useful initiatives are delivered (Weller; 2019; Cha et al., 2022). However, evidence suggests that there is a gap in what is being said, and what is being achieved. For example, Cha et al.'s (2022) pioneering *Just Transition* Listening Project in the USA concluded that the people adversely impacted by the energy transition are generally not represented in decision-making, despite being the most important voices. This was echoed by Weller's (2019) analysis of *Just Transition* policymaking in Victoria, Australia, who found that secretive, top-down decision-making lead to poor decisions.

These findings raise the question of how *Just Transition* efforts (e.g. *Just Transition* Commission, 2021; BEIS & OGUK, 2021) are being experienced by North Sea oil and gas workers in the UK; and whether they are receiving appropriate re-employment support as their industry declines.

1.5 Operationalising the *Just Transition* for UK oil and gas workers for this study

The ideas of justice underpinning this study's approach to a *Just Transition* were set out in Section 1.2. This section builds on this theory by clarifying how a *Just Transition* for UK oil and gas workers facing job loss is operationalised in this study.

A *Just Transition* for fossil fuel workers is generally defined as access to '*decent work*' (UNFCCC, 2015; Healy & Barry, 2017; Harrahill & Douglas, 2019). Decent work has been broadly defined as work that is '*fair, dignified, stable, and secure*' (Blustein et al., 2016, p2). Decent work was originally developed as an aspirational concept by the ILO in 1999 (Pouyaud, 2016). The ILO's decent work framework, now used by policymakers globally, comprises four defining pillars: '*employment creation, social protection, rights at work and social dialogue*' (UNFCCC, 2016, p14). However, decent work was not considered to be an appropriate way to operationalise a *Just Transition* for UK oil and gas workers for three reasons.

Firstly, the context of the UK oil and gas industry calls into question the relevance of using decent work as a benchmark for justice for its workforce. Despite the focus on decent work in *Just Transition* literature, the oil and gas industry – both globally and in the UK - has long been characterised by low job security, due its cycles of boom and bust, and a traditional prevalence of contract-based work rather than permanent employment (Mackie, 2004; GETI, 2021; Milliken & Lindner, 2023; True

Transition, 2023). This raises doubts about whether decent work, characterised by stability and security (Blustein et al., 2016), even exists for workers prior to job loss or transition; and therefore, whether it is a realistic or appropriate aim for workers afterwards.

Secondly, this aspirational concept has been criticised as incomplete (Blustein et al., 2016; Deranty & MacMillan, 2012) and ineffective in practice (Huw & Turnbull, 2018); and its meaning in specific contexts is the subject of continued academic debate (Di Ruggiero et al., 2015; Di Fabio & Maree, 2016). Decent work is one of a '*conceptual cornucopia*' of overlapping concepts broadly focusing on improving quality of work, alongside 'fair' work, a term adopted by the Scottish Government, and the academic Quality of Working Life movement (Warhurst & Knox, 2022, p310). While these terms overlap and have ostensibly different aims and foci, in practice they are used interchangeably and there is a lack of clarity over their individual meanings (Warhurst & Knox, 2022). The lack of clarity over the meaning of decent work raises doubts about the appropriateness of the construct to operationalise a *Just Transition* for this study.

Thirdly, the decent work construct is aimed at the macro-economic level, and most empirical research uses statistical modelling to explore the extent to which decent work is available in different countries (Duffy et al., 2016; Deranty & MacMillan, 2012; Blustein et al., 2016). With this predominantly macro focus, operationalising the *Just Transition* as access to decent work is not immediately congruent with the aims of this study, which aims to help the individual.

A small body of research does focus on conceptualising what decent work means for the experience of the individual worker, rather than as a macro, economic concept (Duffy et al., 2016), and was considered as an option to operationalise the *Just Transition* for UK fossil fuel workers. Duffy et al. (2017) propose a definition and measurement scale of decent work from an individual perspective, based on the five components of the ILO framework most relevant to the individual experience of work: physically and interpersonally safe working conditions, free time and rest, adequate compensation, organisational values aligned to family and individual values, and access to healthcare. Building on Duffy et al.'s (2017) measure, an empirical study by Dodd et al. (2019) further proposed nine additional characteristics of decent work specific to the UK, placing emphasis on personal growth and job fulfilment. Its 14 components include autonomy, person-job fit, job satisfaction, career development opportunities and a positive social environment (Dodd et al., 2019). This UK-specific measure, therefore, integrates a more aspirational construct, alongside decent work: personally meaningful work (Blustein et al. 2022). Thus, it strays from the social justice roots of the ILO's original decent work concept, which captures basic conditions such as dignity and human rights in the workplace and so from the meaning of decent work associated with the *Just Transition* construct. Therefore, the researcher judged that the relevance of the UK-specific definition of decent work (Dodd et al., 2019), with its emphasis on meaningful work, did not offer an appropriate

operationalisation to capture the spirit of a *Just Transition* for workers in the UK's declining oil and gas industry.

Thus, in aggregate, decent work was judged not to offer an appropriate way to operationalise a *Just Transition* for the individual UK oil and gas workers that are the focus of this study.

Literature on re-employment offers an alternative for operationalising a *Just Transition* for individuals seeking work after job loss in the UK's oil and gas industry relevant to the individual. Re-employment success has been defined as '*finding work quickly and/or finding a good job (i.e., with satisfactory wages, benefits, and commute time, fit with the individual's interests or skills, etc.)*' (Wanberg, 2012, p377). This concise definition – good quality work, commensurate with an individual's skill set and interests, obtained relatively quickly – was felt by the researcher to capture the spirit of the ILO concept of decent work. Furthermore, according to the study's position on justice (section 1.2), a *Just Transition* for UK oil and gas workers facing involuntary work transitions is defined by access to what they have lost: good quality replacement work, in line with their skillset and career interests. Thus, re-employment success (Wanberg, 2012) is used to operationalise the *Just Transition* in the context of the UK's oil and gas industry.

The process of obtaining re-employment is complex, involving many different individual and contextual factors (Wanberg, 2012). There are also many different possible outcomes for the individual job seeker, ranging from permanent, full-time employment, to less secure forms of work such as temporary, part-time, or self-employment, and contract work (Warhurst & Knox, 2022). In recognition of this complexity, the specific definition of re-employment success – what each participant sees as being appropriate replacement work, in line with their skills and personal interests (Wanberg, 2012) – is assumed to be unique to each individual. Therefore, this study defines re-employment success by how participants report their personal views about their re-employment status, rather than seeking to impose any more objective definition of re-employment success.

This subjective, individual view of re-employment success is appropriate for three reasons. Firstly, the global oil and gas industry has low job security (e.g. GETI, 2021; Milliken & Lindner, 2023; True Transition, 2023). In the UK, the impact of the industry's semi-regular cycles of boom and bust (GETI, 2021), and the long-term projected decline of UK oil and gas employment (as described in the Introduction to this thesis), indicate that there is little value in defining re-employment success traditionally, as obtaining a permanent, full-time contract work. Previous research has demonstrated that perceptions of job security influence satisfaction among UK oil and gas workers (Dickey et al., 2011). Job satisfaction, in turn, is an important element of how success is experienced by the individual (Ng & Feldman, 2014). Therefore, low job security is may reduce job satisfaction, and this may influence how re-employment success is experienced by the individual. Therefore, in this context

of low job security, allowing participants to define success subjectively is more appropriate than the researcher attempting to impose an objective definition of success.

Secondly, this approach adheres to qualitative research methodology. which must maintain a focus on participants' experiences, and the meaning they give to them (Daher et al., 2017). This involves allowing participants add their own meaning to key academic concepts used in the research, rather than having a researcher impose their own ideas (Daher et al., 2017). This also aligns with the precedent of careers literature highlighting the value of defining success according to each individual's feelings, satisfaction and perceptions about their work, rather than objective marks such as status, contract type or salary (Ng & Feldman, 2014). Therefore, it is more appropriate for qualitative research giving voice to UK oil and gas workers for the first time to allow participants to define re-employment success in their own terms, rather than adhering to a research-driven definition of what constitutes re-employment success.

Thirdly, regarding the specific research topic of job loss and re-employment, defining re-employment success subjectively in this context is appropriate as this involves reflecting on the impact of various obstacles and setbacks in one's working life (Ng & Feldman, 2014). This is highly relevant to this study, which explores the experience of UK oil and gas workers finding re-employment after job loss. Therefore, allowing participants to define re-employment success themselves should allow them to integrate their experiences of job loss and the industry into their evaluation.

1.6 Concluding summary

This chapter introduced the concept of the *Just Transition*, presenting an overview of this fast-growing field of literature. Although the *Just Transition* has roots in trade union movements of the 1970s, the use of the term has expanded significantly in the current energy transition to cover all impacted groups. Academic interest in *Just Transition* research has risen since 2018, with research spanning all continents. The study's approach to justice, drawing on Sen's (2009) 'freedom-focused capability approach' focused on justice at the level of the individual worker, was then introduced.

The chapter then focused on the original concern of the *Just Transition* construct: the fossil fuel workforce. Literature proposing *Just Transition* interventions for fossil fuel workers was reviewed, including early assessment of employment impacts, long-term planning, social dialogue with those impacted, proactive policymaking driven by the needs of the fossil fuel workforce whose jobs are at risk, accountability for change at the level of government and industry and economic and social support for individuals and communities adversely impacted by the energy transition.

Research giving voice to fossil fuel workers was then reviewed. Firstly, a significant body of research focuses on trade unions, where the term '*Just Transition*' originated. Trade unions give a collective voice to workers, offering them the opportunity to exert more influence on *Just Transition* actions

collectively than individually. However, collective power via trade unions may still be weak relative to industry, government and commercial organisations. Furthermore, trade unions may face the contradiction of protecting workers against fossil fuel job losses and supporting net zero efforts that entail fossil fuel job losses.

Secondly, a small but growing field of qualitative research giving voice to individual fossil fuel workers was reviewed, mostly on US coal communities but now broadening to include oil and gas workers. Findings from this important field suggest that coal-dependent communities tend to view the energy transition as a threat to economic well-being and deeply ingrained coal identities. A more recent group of qualitative studies reveals that fossil fuel communities more broadly are not receiving the *Just Transition* support needed. This field of literature raises the questions of how the UK's oil and gas workforce is experiencing the decline of their industry and whether they are receiving the economic and social support they need. This study aims to give voice to individual UK oil and gas workers, to understand their experiences of a *Just Transition*. The chapter concluded by proposing re-employment success as a definition of a *Just Transition* for displaced oil and gas workers.

The following chapter will synthesise literature from the fields of re-employment, the energy transition, and *Just Transition* to suggest the industry-level structural factors and individual agentic factors that may influence access to re-employment success for UK oil and gas workers, and, thus, their access to a *Just Transition*.

Chapter 2: Structure and agency in re-employment success

The preceding chapter introduced and reviewed literature on the increasingly important *Just Transition* construct. The need for more qualitative research that explores the complex experiences of displaced oil and gas workers seeking work in a declining industry was highlighted, and a definition of a *Just Transition* for individual workers as re-employment success was adopted.

This chapter begins by introducing structure and agency as the lens through which the process of achieving re-employment success, and therefore experiencing a *Just Transition*, will be viewed in this thesis. It then presents a literature review identifying the structural and agentic factors that may be relevant to workers displaced from the UK's offshore oil and gas industry. Three structural features are identified as influencing re-employment: the labour market and job availability, which are evaluated by exploring the impact of the energy transition on employment; the energy sector's evolving human capital requirements; and interventions to support workers in accessing alternative employment. Subsequently, individual-level factors enabling agency in an often hostile employment context are identified as psychological, practical, and demographic characteristics.

2.1 Applying the lens of structure and agency to re-employment success

This study applies the sociological lens of structure and agency to understand the context of the UK oil and gas industry and the role of the individual worker in finding re-employment in this context. Structure and agency are generally conceptualised as, respectively, 'macro' concepts in the social context, and 'micro' concepts closer to the level of the individual situated within that context (Fuchs, 2001). This approach follows the precedent of a small group of qualitative studies that integrate structure and agency in analysing the experience of job loss from extractive industries: for example, the reactions of power station workers in Australia to the threat of job loss (Snell et al., 2015), career changes following redundancy from the declining Welsh steel industry (Gardiner et al., 2009), and ex-miners' exercise of agency in former coal mining communities in England and Wales (Strangleman, 2001).

Structure and agency are important and practical constructs for workers displaced from the UK's declining oil and gas industry. What does it take for an individual to act with agency, and exert an influence over their life's events, when coping with job loss and seeking re-employment? Furthermore, what features of the industry's social context influence the exercise of agency by the individuals within it? The following section introduces the academic approach to structure and agency taken in this study and provides definitions of both terms.

The morphogenetic approach to structure and agency

This study's approach to structure and agency is in line with the Margaret Archer's morphogenetic approach (Archer, 1982). The relationship between individual agency and the surrounding context, or

'structure', is a longstanding sociological debate, which is summarised briefly here to clarify the approach taken in this study. There is a general academic consensus that individual action is both constrained and enabled by social structures (Hitlin & Johnson, 2015). However, the nature of this interplay differs according to different theorists. Bourdieu's (1977) influential theory of habitus effectively awards universal importance to structure (Reed-Dahany, 2004). Bourdieu rejects outright the concept of rational, conscious, autonomous behaviour, instead positing that all choices and actions are informed subconsciously by the individual's social experiences, and thus, by structure (Reed-Dahany, 2004).

Giddens' (1979; 1984) structuration theory awards more importance to the individual agent: individuals are portrayed as conscious, rational actors, with the potential to influence structure by acting independently and creatively (Sewell, 1992). However, for Giddens, agency, and context '*presuppose*' each other (Giddens, 1979, p.53). Structure continually informs, enables, and constrains agency, just as, simultaneously, agency reproduces, maintains, and influences structure (Giddens, 1984; Sewell, 1992). For Giddens, structure, and agency are recursive, mutually constitutive, and analytically inseparable (Emirbayer & Mische, 1998; Giddens, 1984; Giddens, 1979; Sewell, 1992).

Like Giddens, Archer recognises structure and agency as mutually influential (Archer, 1982; Holck, 2016). Archer's morphogenetic approach[2], however, provided the first influential critique of Giddens' ideas about the recursiveness of structure and agency (Archer, 1982, 1995; King, 2010). Archer's objection to structuration theory is not philosophical, but analytical (Jessop, 2005); she argues that if structure and agency are continually mutually constitutive, as theorised by Giddens, they cannot be analysed separately and used practically to explain what is happening in society (Archer, 1982; Emirbayer & Mische, 1998; Mutch, 2004). For Archer, it is important to break down the mutual influences of structure and agency into distinct steps to understand the impact of each one (Archer, 1982; 1995). This challenges Giddens' view that the continual recursiveness between structure and agency precludes analysis (Jessop, 2005; King, 2010). Like Giddens' structuration theory, Archer's theory of morphogenesis holds that structure and agency are dynamically interlinked; that structure informs agency, and, conversely, that human agency plays a role in shaping society. However, unlike Giddens, Archer holds that structure and agency *must* be considered as analytically distinct, in discrete chronological phases, to facilitate practically useful analysis (Archer, 1982; 1995). An Archerian approach thus enables analytical distinction between structure and agency (Herepath, 2014; King, 2010).

[2] Archer (1982) credits the original idea of 'morphogenesis' to sociologist Walter Buckley (Buckley, W. 1967. *Sociology and Modern Systems Theory*. New Jersey, Prentice Hall) but the morphogenetic approach is now widely attributed to Archer.

Therefore, an Archerian morphogenetic approach is adopted in this thesis, with the assumption that the mutual influence of structure and agency on each other can be paused and analysed, to understand how structure influences agency in the context of the UK oil and gas industry as a one-way relationship.

Defining structure and agency in this thesis

Both structure and agency are difficult to define (Sewell, 1992; Hitlin & Johnson, 2015); therefore, various prominent definitions are reviewed here to justify the definitions adopted in this study. Giddens' (1979, p.364) definition of structure as '*rules and resources, recursively implicated in the reproduction of social systems'* has been critiqued as deceptively simple, because of the complexity of such '*rules and resources'* (Sewell, 1992). For Sewell (1992, p.7), structure is a metaphor representing dynamic '*cultural schemas*', which are continually evolving with social interaction. Thus, for Sewell (1992), no one specific definition can ever capture its meaning in every context. In previous empirical research on the role of structure and agency in individual working lives and careers (Gardiner et al., 2009; Snell et al., 2015; Tomlinson et al., 2013), 'structure' has comprised concepts such as education, social context (including employing organisations and industries), financial resources, the economy, and the labour market.

This study draws on these definitions and usages of 'structure' as the past, present, and future social and economic context within which an individual leads their life.

Meanwhile, agency has been described as a vague and '*slippery*' concept (Hitlin & Elder, 2007, p.34), often inviting abstract discussion (Hitlin & Johnson, 2015; Emirbayer & Mische, 1998; Fuchs, 2001). However, concise and analytically useful definitions exist. Giddens' definition focuses on the ability to act: *'[a]gency refers not to the intentions people have in doing things but to their capability of doing those things in the first place*' (Giddens, 1984, p.9). Other definitions define agency in relation to surrounding structures: '*to be an agent is to influence intentionally one's functioning and life circumstances*' (Bandura, 2006); '*to be capable of exerting some degree of control over the social relations in which one is enmeshed'* (Sewell, 1992). For Elder and Johnson (2002, p.61), *'individuals construct their own life course through the choices and actions they take within the opportunities and constraints of history and social circumstances'*. Furthermore, agency involves an element of temporality, involving habits formed from past experiences, judgement of present events, and hopes and plans for the future (Emirbayer & Mische, 1998; Bandura, 2006).

A definition of agency that integrates these concepts is adopted for this study: agency is defined as a capacity to exert a force on the surrounding social and economic context in order to influence one's life events. This capacity may comprise habits created from the past, reactions to events in the present, and goals and hopes for the future (Emirbayer & Mische, 1998).

The morphogenetic approach, and these definitions of structure and agency, align with the study's approach to justice, introduced in Chapter 1. Sen's (2009) approach to justice is focused on the individual's power to act, and as such deals fairly directly with the concept of agency. For Sen (2009), any significant constraint to one's capability to pursue a desired goal, or their freedom to choose a course of action, can be evaluated as an injustice. Agency is defined in this study as the capacity to exert a force on one's context, and influence their life events. Agency can thus be closely aligned with Sen's (2009) concepts of individual capabilities and justice. Therefore, any significant constraint of an individual's agency can be interpreted as an injustice.

Meanwhile, Sen's (2009) seminal work does not deal as explicitly with the influence of structure on the exercise of justice. However, using a number of examples and illustrations, he demonstrates that the social context and environmental conditions may constrain or enable one's exercise of capabilities and freedoms. Therefore, it is possible that the structural features of the UK oil and gas industry may influence the exercise of agency by workers who have lost their jobs; and thus, may influence whether justice is served to them in the net zero transition.

Structure and agency in the search for re-employment after job loss in the UK oil and gas industry

Throughout this chapter, the lens of structure and agency is applied to a literature review of the possible factors impacting the experience of displaced UK oil and gas workers. This is to understand how the structural features of the UK oil and gas industry impact job seekers' ability to exercise agency, and, at an individual level, to understand the factors that enable or constrain the exercise of agency. In accordance with the study's morphogenetic approach, the influence of structure on agency is analysed as a one-way relationship.

To analyse structural and agentic factors that are relevant to displaced oil and gas workers seeking work, literature is drawn from the fields of *Just Transition*, the energy transition, and re-employment. A review of the *Just Transition* field of literature was presented in the previous chapter. Wider energy transition literature is used to explore the anticipated employment impact of the net zero transition, and to understand the availability of replacement work as oil and gas job opportunities decline. Meanwhile, the re-employment literature is analysed to understand how structural and agentic factors influence access to replacement work across contexts, beyond literature specific to the energy transition. Interest in the process of finding work after job loss goes back to America's Great Depression, when several scholars tackled the problem of boosting post-war re-employment. (Wanberg, 2012). Since 2000, renewed research attention has focused on the factors leading to re-employment after job loss (Wanberg, 2012). Today, a significant body of literature spans the fields of psychology, sociology, economics, and policy (Wanberg et al., 2002).

No previous research exists that pertains directly to the process after finding re-employment after job loss from the current UK oil and gas context; and relatively few re-employment studies are situated within declining industries (e.g. Benedict & VanderHardt, 1997; Ostry et al., 2001; Jolkkonen et al., 2012). Therefore, instead of using an existing model as a framework, this review takes a more inductive approach to identify the potential structural and agentic factors that influence access to work after job loss. Since energy employment is different in every country (Sooriyaarachchi et al., 2015), UK-specific literature is prioritised where available.

While this study's definitions of structure and agency are stated in the preceding sub-section, it is also important to clarify what type of concepts are considered structural and agentic in the following literature review. In line with observations by Fuchs (2001), 'structure' is broadly used to refer to large, 'macro' concepts at the level of society and institutions, and agency is broadly used to describe 'micro' concepts at the level of the individual, such as psychology and personal resources. However, structure and agency exist at the poles of a continuum, and are merely '*variable devices for sense making*' of a social phenomenon (Fuchs, 2001, p31). Thus, what is classed as agentic or structural in one situation can be different in another, and a concept may become more agentic or structural as the perspective shifts (Fuchs, 2001). Therefore, there is some overlap: for example, human capital is viewed both as a structural feature of the UK's highly skilled, evolving oil and gas industry, and, at the individual level, as an agentic resource that enables an individual to influence their working life. As this thesis adopts the Archerian view that structure can precede agency for analytical purposes, this literature review focuses first on the structural constructs that may be relevant to the experience of finding work after job loss.

2.2 Employment impact of the energy transition

The first structural feature likely to influence access to re-employment is the job market. The economic context of the UK's oil and gas sector will be a strong influence on job availability (Duffy et al., 2016; OGUK, 2020; Wanberg et al., 2002). The cyclical nature of oil and gas is important: the job market may be buoyant during upturns and hostile during downturns (Jolkkonen et al., 2017), regardless of strategy issues within the sector. A significant body of literature focuses on quantifying the net employment impact of the energy transition. Employment is generally measured in three categories: direct (e.g. workers employed by oil operating companies), indirect (e.g. supply chains supporting the industry), and induced (jobs created via the industry's wider economic impact, such as workers providing public transport services in areas made busier due to industry activity) (Allan, Comerford, et al., 2019; Allan, Connolly et al., 2019). This review focuses on direct employment as the most relevant category to upstream oil and gas workers in the UK.

The global job outlook is promising for the energy sector. There are challenges in measuring employment accurately, with different methods relying on different assumptions and using different

data sources[3] (Lambert & Silva, 2012; Stavropolous & Burger, 2020; García-García et al., 2020). However, despite these challenges, the consensus is that the evolution of the energy sector will result in significant direct and indirect job creation internationally. For example, Ram et al. (2022) estimate that, globally, direct employment in the energy sector will more than double by 2050, from 57 million in 2020 to 134 million in 2050. However, integrating job losses from the fossil fuel industry, as well as job creation from renewable energies, is important to develop a holistic picture of the net employment impact of the net zero transition (Lambert & Silva, 2012). Pai et al. (2021) estimate that 84% of global direct employment in energy will be in solar and wind by 2050, if global warming targets are met, exceeding fossil-fuel job losses in most countries (except those that export fossil fuels).

Similarly, several recent literature reviews conclude that, globally, declining fossil fuel jobs will be absorbed and outnumbered by job creation in cleaner energy industries (e.g. García-García et al., 2020; Dominish et al., 2019; Pai et al., 2021; Garrett-Peltier, 2017). Although evidence at a national level is more limited, several papers indicate that job creation from lower carbon energy sources would replace lost fossil fuel jobs in Germany (e.g., Fischer et al., 2016), South Africa (e.g. Hanto et al., 2021), Australia (e.g. Chapman et al., 2018), and Chile (Nasirov et al., 2021).

In the UK, research findings present a more mixed picture. Energy sector reports estimate that 40,000 new roles will be created by 2030, after accounting for oil and gas job losses (RGU ETI, 2021; BEIS & OGUK, 2021). Most academic analysis of the impact on employment is limited to job creation from renewable energy from wind and marine resources, indicating that it does stimulate employment[4], particularly with local content policies in place (e.g. Allan et al. 2021; Allan et al., 2020; Allan et al., 2014). However, most studies analyse dated employment data, potentially limiting their relevance to the dynamic energy sector in 2022. For example, Allan et al. (2021) use UK Input-Output tables from 2010,. Drawing on more recent data, the Office for National Statistics (ONS, 2022) presents a more conservative picture of renewable energy employment, finding that UK-wide low carbon and renewable energy employment was fairly stable between 2014 and 2020, with no significant increase.

Few UK-specific studies integrate the impact of fossil fuel job losses to present forecasts of the net employment impact for the energy sector. An exception is Esteban et al.'s (2011) analysis of North Sea employment, which finds that employment in the offshore maritime energy sector could absorb

[3] Traditional, 'top-down' Input-Output (IO) models use historic official data to estimate direct, indirect and induced employment; computer-generated equilibrium (CGE) analysis use the same data as IO models, while enabling sophisticated analysis to forecast long-term effects (García-García et al., 2020; Lambert & Silva, 2012).

[4] Initial manufacture and construction phases of projects create most jobs (Bergmann, 2014); however, most studies report significant legacy effects on employment levels, with fewer but more sustainable jobs available for long-term maintenance work (e.g. Fanning et al., 2014).

lost oil and gas jobs by 2050, but this study is 11 years old at the time of writing. Furthermore, Esteban et al. (2011) observe that this is based on the assumption that the oil and gas workforce possesses the relevant human capital for a smooth transition. The importance of human capital in the evolving energy sector is explored in the following section.

The geographical location of jobs will play a role in access to alternative employment. Although global and national analyses of the impact of transition efforts on net employment suggest more jobs will be created than lost, jobs might be lost and created in different regions of the same country, rendering replacement jobs either out of reach or requiring geographical relocation (Sharma & Banerjee, 2021; Carley & Konisky, 2020; Carley et al., 2018). For example, Heras and Martin's (2020) empirical case study of Spain suggests that although renewable energy employment can replace lost fossil fuel jobs in considerable numbers in the country as a whole, the geographical location of new jobs will determine the practicality of accessing alternative employment opportunities. The UK's oil and gas region is centred in North-East Scotland, and it is anticipated that people in this area might be the hardest hit by changing employment opportunities in the energy sector.

Timing is an important factor that determines whether the UK oil and gas industry workforce can access job opportunities in the renewable energy sector. Kuriyama and Abe's (2021) analysis of the impact of the energy transition on local employment in Japan suggests that a successful workforce transition will require gradual phasing out of conventional fuels to avoid a surplus of displaced workers on the market. The question of timing is also relevant to skills. Jagger et al. (2013) observe that there is a risk of '*negative spillover*', whereby required human capital for low carbon energies is unavailable as it is being used in the oil and gas industry (p45). Fankhaeser et al. (2008) observe that there is a risk of oil and gas workers not having the required skills in time, and that those not reskilled for clean energy activities may face unemployment or underemployment. The following section expands on the important topic of skills.

2.3 Evolving skills requirements

Analysis of previous UK energy transitions suggests that 'human capital' (Schultz, 1961; Becker, 1964) will be critical for the success of the net zero transition as a whole (Allen, 2012). Human capital is defined in this study as '*the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being*' (OECD, 2001, p.18). Human capital is grown by investments in an individual's intrinsic personal resources through activities such as training, education, work experience, and healthcare (Becker, 1993). In theory, investments in human capital improve access to work and income, thus generating a financial return, as well as generating intangible returns like personal well-being (Becker, 1993; OECD, 2001). Human capital is conceptualised both as a personal resource for individuals, and a collective resource for organisations

and industries (Becker, 1993). In the *Just Transition* literature, skills are the most commonly cited element of human capital (OPITO, 2018, 2019; RGU ETI, 2021). Therefore, human capital is referred to synonymously as 'skills' throughout this thesis.

As the evolving energy sector offers the most significant employment opportunities for displaced oil and gas workers (RGU ETI, 2021), this review focuses on literature that is specifically relevant to the transferability of oil and gas jobs to peer occupations in the lower carbon energy sector[5]. A significant body of research proposes that existing oil and gas workers could be ideally positioned to provide skills for growing renewable industries, as the energy sector evolves. Indeed, an estimated 90% of oil and gas jobs have high or medium transferability to cleaner energy production (RGU ETI, 2021). This is supported by empirical academic research from the UK and North America. Memon and Rashdi (2008) present primary data from British industry stakeholders suggesting that oil and gas workers could be ideally placed to fulfil the country's RE human capital requirements, although the study is dated and their methodology is opaque. Combe (2014) analyses the skills required for the Scottish marine energy sector, using secondary data from industry bodies and the Scottish government, supplemented by interview data from select industry stakeholders. She proposes that construction jobs are fairly transferable from oil and gas to marine energy because both industries involve work on large-scale structures, whereas installation and maintenance jobs are less transferable because of the different physical characteristics of RE and petroleum installation sites.

More recently, Swennenhuis et al. (2020) analysed data from interviews with oil and gas industry stakeholders in Aberdeen, concluding that typical O&G skills like problem-solving will be highly transferable to carbon capture and storage (CCS) in Scotland. However, the authors also identified a lack of clarity over job creation and required skills for CCS, which would be needed to create a *Just Transition* in Scotland (Swennenhuis et al., 2020). In the North American context, a qualitative Canadian study by Leitch et al. (2019) suggests that oil and gas workers could provide human capital for the geothermal industry because of the similarity in their skillset, as both industries require drilling. However, these findings may not be relevant to the UK RE industry, which is dominated by wind and marine energy (Li et al., 2016). Chen et al.'s (2020) analysis of US-based O*NET profiles for offshore oil and gas jobs found that drillers, derrick operators, and roustabouts have the relevant skillset for green jobs such as installation and maintenance of wind turbines, but recommend that around a year of retraining would still be required.

[5] This review excludes the significant body of literature that draws on the discourse of 'green' jobs (including, but not limited, to low carbon energy work like renewables) vs. 'brown' jobs (including, but not limited to, higher carbon energy work like fossil fuels) (e.g. Consoli, Marin, Marzucchi & Vona, 2016). The concept of green jobs has been criticised as ambiguous, vague and inconsistent (Allan et al., 2017; Furchtgott-Roth, 2012). Thus, analysing skills at the level of 'green' and non-green or 'brown' jobs is overly simplistic and unrealistic (Bray et al., 2022).

In summary, studies suggest that it is likely that oil and gas workers can provide human capital for growing renewable industries. However, this will require clarity over plans for job creation and the skills required, and support for workers to reskill and upskill. Furthermore, there may be more transferability in the construction of oil and gas and renewable structures than in the operations and maintenance of oil platforms (Combe, 2014).

The net zero transition is not the only change impacting the energy sector's human capital requirements. As in many industries, automation will impact the skills required for all energy jobs. The skillset required for future oil and gas work will be characterised by the shift away from more '*transactional*' activities which can be easily automated towards more strategic, operational, and people-focused roles (OPITO, 2019, p11). Jobs involving routine physical work and data handling – for example, drilling and administration support functions – which are easily automated, are highlighted as being particularly at risk of obsolescence (OPITO, 2019; Arcelay et al., 2021).

Meanwhile, roles involving the application of '*uniquely human meta-skills*' (Skills Development Scotland 2019, p.6) – like problem-solving, critical thinking, creativity, innovation, communication, and managing people and projects – are likely to see increased demand (Alibasic et al., 2022; Arcelay et al., 2021; Skills Development Scotland, 2019; OPITO, 2019). In evolving oil and gas work, demand for practical digital skills – for example, data analysis, IT design, and cloud technology – is also expected to rise (Georgiou et al., 2021).

2.4 Government and industry support

Displaced oil and gas workers are likely to benefit from initiatives by the government and industry to help them find work again. Chapter 1 included a review of interventions recommended by academic literature on the *Just Transition*. This includes early assessment of employment impacts; long-term planning; social dialogue with impacted groups to enable proactive policymaking driven by the needs of those impacted; accountability for change at the level of government and industry; and economic and social support for individuals and communities adversely impacted by the energy transition.

Support with reskilling is likely to be critical. Oil and gas extraction work is highly skilled (Allan & Ross, 2019; Dominish et al., 2019). For example, it takes around ten years for an oil and gas engineer to gain professional competence (Hopkins, 2008), regardless of formal education. Renewables work is also highly skilled, with around 90% of jobs estimated to be at medium or high skill levels (Allan, Connolly et al., 2021). Therefore, most oil and gas workers will likely need upskilling or reskilling to some extent to adapt to the evolving UK energy sector, with an increasingly high proportion of renewable jobs (Popp et al., 2021; Chen et al., 2020; OPITO, 2019).

Thus, the energy sector must make a concerted effort to retain and reskill existing oil and gas workers, as well as to recruit new ones (OPITO, 2019). This will entail collaboration between the government,

industry bodies, employers, and education providers to support workers in gaining the new skills required (OPITO, 2019; Sooriyaarachchi et al., 2015; Kuriyama & Abe, 2021; McQuaid & Bergmann, 2016). For example, based on their analysis of policy data, McQuaid and Bergmann (2016, p2) recommend that Scotland's energy employers adopt a '*career-first*' strategy, including offering ongoing investment in training and development opportunities; that is, providing long-term skills support to workers seeking lifelong careers in this evolving industry. Reskilling efforts may not be extensive or costly: Louie and Pearce's (2016) analysis of energy reskilling initiatives in the US found that retraining coal workers for solar installations requires a relatively small financial investment. Ultimately, however, without concerted efforts to retrain workers, Hanto et al. (2021) propose that it is not clear whether the new jobs created in renewable energies will benefit displaced fossil fuel workers.

Re-employment literature further suggests training and personal support interventions that can help displaced workers, albeit not specific to the unique oil and gas sector. Primarily, job search interventions include training courses designed to help individuals find employment (Liu et al., 2014). Job search interventions that help individuals to develop these psychosocial resources can boost an individual's perception of their employability and well-being, and equip the individual with effective job search behaviours and skills (De Battisti et al., 2014; Liu et al., 2014; Hulshof et al., 2019). In particular, interventions that boost some of the resources identified in the following section as enabling agency – self-efficacy, social support, proactivity, and goal setting – can improve individuals' re-employment chances (Liu et al., 2014). Furthermore, individually-tailored coaching and counselling may help job seekers understand their values and goals and overcome challenges in their job hunt (Behrendt et al., 2021; Grützmacher & Schermuly, 2021; Schmidt & Flatten, 2022; van Hooft, 2014).

2.5 Individual-level factors that enable agency in the search for re-employment

Work provides many psychosocial benefits, such as activity and structure, social connection, and a sense of identity and purpose (Jahoda, 1982). Therefore, losing work and its advantages may adversely impact well-being (Jahoda, 1982). Job loss has been described as a '*critical life event*' (Gardiner et al., 2009, p727) and a '*career shock*' (Akkermans et al., 2018, p.3), which is likely to have significant repercussions for the individual affected. Hallqvist and Hyden (2014) observe that most empirical research on the experience of involuntary work transitions focuses on the impact of job loss and subsequent unemployment: for example, the negative social, psychological, and financial effects of redundancy (e.g. Anaf et al., 2013; Parris & Vickers, 2010; Snell et al., 2015). Two influential meta-analyses have documented the poor physical and mental health impacts arising from unemployment (McKee-Ryan et al., 2005; Paul & Moser, 2009). In the longer term, unemployment

can have a lasting '*scarring*' effect on the individual, their well-being, and their subsequent career paths (Egdell & Beck, 2020, p937).

Thus, recovering from the stress of job loss, and then finding replacement work, is a complex process (Latack et al., 1995). Furthermore, individuals facing involuntary changes in their working circumstances due to industry conditions outside of their control – such as the UK oil and gas industry's semi-regular downturns – may experience a loss of power, and may struggle to access quality replacement work (Duffy et al., 2016). To understand the multifaceted factors influencing access to work after a job loss, the re-employment and employability literature provides suggestions of the individual-level factors that enable an individual to act with agency during a challenging time.

Several scholars have presented theories, empirically tested models, literature reviews, and meta-analyses that integrate various individual-level variables as predictors of job search behaviours and re-employment success after job loss (e.g. Brouwer et al., 2015; Wanberg et al., 1999; McArdle et al., 2007; Solove et al., 2015; Vinokur & Schul, 2002; Thompson et al., 2017; Wanberg et al., 2020; Kanfer; Wanberg & Katrowitz, 2001; van Hoye et al., 2015; Latack et al., 1995; van Hooft et al., 2021). However, context is a key influence on the job search process (Wanberg et al., 2020). These models, reviews and theories are not based on data from extractive industries, nor from any other contexts comparable to the UK's cyclical, and declining, offshore oil and gas industry. Therefore, the following literature review takes an inductive approach to identify individual predictors of re-employment which have received significant academic attention across theories and papers.

Most studies in the largely positivist field of re-employment use quantitative methods to measure the individual-level antecedents of re-employment success. This relationship is often conceptualised as being mediated by job search behaviours, which are operationalised as job search strategies, persistence, and the intensity of job-seeking behaviours (Hulshof et al., 2020; Leana & Feldman, 1995; Wanberg et al., 1999; Wanberg et al. 2020). The research strategies and findings are fairly consistent. Individual factors like self-efficacy, financial need, social support, and personality traits predict active job search behaviours (Kanfer et al., 2001; Šverko et al., 2008; van Hoye et al., 2015). Proactive and high-activity job search behaviours then lead to re-employment success (Kanfer et al., 2001; Amato et al., 2016; Wanberg et al., 2005; Hulshof et al., 2020; Saks, 2006). Other scholars also focus on the antecedents and consequences of another re-employment outcome, emotional well-being during the job search (e.g. Lai & Wong, 1998; Wanberg, 1997), though this is less commonly researched.

Psychological attributes

Agency is often conceptualised as primarily involving psychological constructs (e.g. Bandura, 2006; Hitlin & Johnson, 2015). Two psychological constructs used to operationalise agency are self-efficacy

and optimism (Hitlin & Elder, 2007; Hitlin & Johnson, 2015). The value of both constructs is well-documented in the re-employment literature.

Self-efficacy (Bandura, 1977) has been defined as one's '*[belief] in their capability to exercise some measure of control over their own functioning and over environmental events'* (Bandura, 2001, p.10). Bandura (2001) proposes self-efficacy as the core of human agency, as an individual is only motivated to act when they believe that their actions may have the intended outcome, and it is integrated as a core element of agency by other scholars (e.g. Hitlin & Johnson, 2015; Hitlin & Elder, 2007). It is closely linked to self-esteem (Chen et al., 2004), which is considered part of self-efficacy in this thesis. Self-efficacy is one of the most commonly researched variables in the job search and re-employment literature (Saks et al., 2015). Self-efficacy has been integrated as a core element of theories of job loss. Latack et al. (1995) propose self-efficacy as a key element of their integrative model of coping with job loss. Building on Bandura's work, Lent et al. (1994) and Lent and Brown (2013) proposed self-efficacy as a core component of the influential Social Cognitive Careers Theory, which is applied to the process of seeking re-employment after job loss by Thompson et al. (2017).

In re-employment literature, self-efficacy has been linked widely to positive re-employment outcomes in the quantitative empirical literature from France, the US, the UK, Ireland, North America, New Zealand, Australia, and China. For example, studies have identified self-efficacy as a predictor of job search behaviours and intensity (Fort et al., 2011; Vinokur & Shul, 2002; Wanberg et al., 1999), job search quality (van Hooft et al., 2022), and obtaining re-employment (Holmes & Werbel, 1992). Meta-analyses have linked self-efficacy to increased job search behaviours, emotional well-being during the job search process, and achieving re-employment (Kim et al., 2019; Kanfer et al., 2001). This wealth of academic attention and evidence suggests that self-efficacy will be an important part of agency for displaced UK oil and gas workers seeking re-employment.

Optimism about the future is also portrayed as a key element of agency by sociologists (Hitlin & Elder, 2007; Hitlin & Johnson, 2015). Optimism has been defined as having positive expectations for the future and interpreting and explaining events in a positive way (Luthans et al., 2007). Optimism contributes to agency in that individuals with positive expectations for their lives, and a positive outlook on events, are more motivated to act (Hitlin & Elder, 2007). In the re-employment literature, there is some evidence of optimism's role in achieving re-employment. For example, optimism has been linked to proactive behaviours during job loss, and re-employment success (Armstrong-Stassen, 1994; Leana & Feldman, 1995). However, the evidence is less consistent than self-efficacy: for example, Kanfer et al.'s (2001) meta-analysis did not find a relationship between optimism and job search behaviours. Evidence of the role of optimism in emotional well-being is more consistent. Optimism has been linked to increased coping, mental health, and life satisfaction in individuals adjusting to unemployment after job loss (Duffy et al., 2013; Lai & Wong, 1998; Wanberg, 1997).

Outside of the re-employment context, but relevant to the period in which data was collected for this study, thinking positively was identified as the most prevalent coping construct during Covid-19 according to a survey of 11,000 UK adults (Wright et al., 2022).

Re-employment literature suggests that further psychological constructs may be involved in acting with agency in the context of seeking work after job loss. Common psychological themes in re-employment literature include goals, internal locus of control, and adaptability, amongst others. Firstly, the process of searching for re-employment after job loss involves much self-regulation, by which an individual strives towards a goal, reducing the discrepancy between where they are now and where they would like to be (van Hooft & Noordzij, 2009). Goals have been linked to increased motivation and performance across contexts (Locke & Latham, 2002). According to the re-employment literature, focused job search behaviours are important for a high-quality job search (van Hooft, Wanberg & van Hoye, 2012; de Battisti et al., 2016; Koen et al., 2010). Clear re-employment goals, to which the individual has committed, have been linked to higher job search intensity, and increased chances of finding work after unemployment (Creed et al., 2009; van Hooft & Noordzij, 2009; Thompson et al., 2017; Prussia et al., 2001; Körner et al., 2015; Zikic & Khlehe, 2006).

Locus of control (Rotter 1966; 1990) captures how an individual attributes events. This enduring construct has been the focus of much research (Ng et al., 2006; Galvin et al., 2018). Individuals with a more internal locus of control perceive life events as being largely within their influence (Rotter, 1990). Individuals with a more external locus of control, meanwhile, perceive events as being controlled by others, luck, chance, or fate, or as simply uncontrollable (Rotter, 1990). Locus of control has often been discussed synonymously with self-efficacy, but they are considered to be separate constructs in this thesis, given that locus of control's focus is on life events and the surrounding environment, and self-efficacy is focused on the individual's internal capabilities (Johnson et al., 2015, 2016).

In previous research, the internal locus of control has broadly been associated with positive outcomes (Galvin et al., 2018). Individuals with an internal locus of control are generally portrayed as more likely to believe in their ability to act with agency, and exert influence on their life course, whereas an external locus of control can lead individuals to feel victimised by circumstances outside of their control (Ng et al., 2006). Meta-analytic evidence has associated an internal locus of control with positive work-related outcomes (Ng et al., 2006). Having an internal locus of control has been previously identified as contributing to re-employment by leading to increased job search efforts, better re-employment outcomes, and reduced stress (e.g. Caliendo et al., 2015; Ginexi et al., 2000; Holmes & Werbel, 1992; Mallinckrodt & Fretz, 1988; Vinokur & Schul, 2002).

In contrast, much previous research portrays the external locus of control as leading to poor outcomes (Galvin et al., 2018). However, some recent approaches have suggested that having an external locus

of control can also be a benefit (Galvin et al., 2018). For example, van Hooft and Crossley (2008) identified the external locus of control as boosting motivation to engage in job search activities in the face of perceived challenges.

Adaptability in the context of work and careers has been defined as '*the quality of being able to change, without great difficulty, to fit new or changed circumstances*' (Savickas, 1997, p.254). Adaptability has been identified as a useful attribute for people seeking work following involuntary work transitions (Duffy et al., 2016; McArdle et al., 2007; Zikic & Klehe, 2006; Koen et al., 2010). For example, Andersson (2015) identified the willingness to relocate geographically, or change jobs, as predictors of re-employment for workers displaced from a Swedish assembly plant.

Finally, re-employment literature suggests various other psychological constructs that may be relevant to oil and gas workers' search for re-employment, such as career identity (McArdle et al., 2007) and resilience (Chen & Lim, 2012; Fleig-Palmer et al., 2009; McLarnon et al., 2020; Scrimpshire & Lensges, 2021; Wanberg, 1997). Personality traits like conscientiousness, proactivity, and extraversion have also been linked to re-employment success (Kanfer et al., 2001; Thompson et al., 2017; van Hoye et al., 2015).

Practical resources

Re-employment literature suggests that other personal situational variables constrain and enable agency. Firstly, health is an important asset to any individual seeking re-employment. Empirical research, including meta-analyses, consistently shows that people with poor physical or mental health have reduced job search behaviours and may struggle more to gain re-employment (Schuring et al., 2013; Skärlund et al., 2012; Stolove et al., 2017; Brouwer et al., 2015; Carlier et al., 2014). Conversely, unemployment has been linked to reduced physical and mental health (Paul & Moser, 2009; McKee-Ryan et al., 2005). Thus, while physical and mental health are important for the job search, they are also at risk during this stressful time.

Social capital (Lin, 2001) is an important theme in the re-employment literature. This involves access to professional social networks, which can provide access to work opportunities (McArdle et al., 2007; Wanberg et al., 1999; van Hoye et al.,, 2009; Wanberg et al.,, 2000). Further to professional networks, social support from friends and family helps the individual through a stressful time (Solove et al., 2015; Duffy et al., 2016; Latack et al., 1995; McKee-Ryan et al., 2005; Lazarus & Folkman, 1984; Creed & Moore, 2006; Tuncay & Yildirim, 2015; Kanfer et al., 2001).

Re-employment literature recognises human capital as critical to finding replacement work (e.g. McArdle et al., 2007). However, the high skill levels of oil and gas workers (Allan & Ross, 2019; Dominish et al., 2019) may not be a benefit in the evolving energy sector. A central idea of the human capital theory is that investment in an individual's learning and skills development translates into

opportunities for work (Becker, 1993). However, critics of human capital theory observe that possessing a skill does not automatically create a demand for it (Dobbins et al., 2014). Dobbins et al.'s (2014) qualitative study researched workers' responses to an aluminium plant closure in Wales. Their analysis revealed that workers face the '*paradox*' of being highly skilled but unemployed, and having to '*make do and mend*' their employment situation (Dobbins et al., 2014, p515). Thus, Dobbins et al.'s (2014) results suggest that human capital has less value when few job opportunities exist. In the context of the UK oil and gas industry, therefore, displaced workers may possess skills that have taken years to develop, but are suddenly obsolete, leaving them at a disadvantage in the job market without a clear strategy for their next career steps.

Therefore, in the context of the energy sector's evolving skill requirements, individual workers must equip themselves for careers in a dynamic energy sector. They will need to be flexible, adaptable, and versatile, and to have multiple skills at their disposal, including technology (OPITO, 2019; Georgiou et al., 2021; McQuaid & Bergmann, 2016). Section 2.4 proposed various structural supports and interventions from the government and industry that could help workers, such as reskilling programmes. However, in the volatile work environment of the 21st century, the responsibility is increasingly on individual workers to invest their own time and money in their own human capital to remain employable (Fleming, 2017; King, 2004b). Therefore, oil and gas workers may need to upskill or reskill using their own resources to remain employable in the evolving energy sector.

Finally, personal financial capital also plays an important role in the experience of unemployment. Losing a job generally means losing access to income, a significant source of stress (Warr & Jackson, 1984). Low financial resources during unemployment may create a strong motivation to find replacement work, but may also trigger stress and endanger mental health (Price et al., 2002; Kanfer et al., 2001; Vinokur & Shul, 2002; Wanberg et al., 1999; van Hooft & Crossley, 2008). Furthermore, as the job search wears on, increasing financial stress can contribute to fatigue and less effective job search behaviours (Lim et al., 2016; Gerards & Welter, 2022; Dahling et al., 2013). On a practical level, transport costs can impede access to in-person interviews and job opportunities for people living far from employment hubs (Philips, 2014). The role played by financial resources for displaced workers in this study may also be nuanced by the context of the UK's traditionally highly-paid oil and gas industry. For example, Swennenhuis et al.'s (2020) analysis of interview data with industry figures in Aberdeen suggests that workers used to high remuneration might be deterred from seeking alternative, less well-paid work in the region's growing renewable energy sector. Therefore, workers displaced from the highly paid oil and gas industry are likely to suffer from stress due to financial worries; and, for those used to high salaries, money may also influence their choice of re-employment.

Demographics

Finally, previous research also suggests that three demographic characteristics – age, gender and ethnicity – may influence the exercise of agency by UK oil and gas workers seeking re-employment. Firstly, since age may influence the prospect of re-employment success, older workers may be at a disadvantage in seeking re-employment (Wanberg et al., 2016; Brouwer et al., 2015). Job loss for older workers can be an especially challenging experience, given the loss of identity built up over a long career (Kira & Klehe, 2016; Gabriel et al., 2013). Specific to the energy sector, Pollin and Calacci (2019) estimate that the majority of fossil fuel job losses in the US will be covered by people reaching a natural retirement and that only the remaining minority of older workers would need transition support. However, non-retiring older fossil fuel workers may need extra support in transitioning to new jobs and developing new skills (Evans & Phelan, 2016). Older oil and gas workers with lower skill levels may be particularly at risk in the energy transition. For example, Baran et al.'s (2020) case study in Poland found that around half of miners working in lower-skilled, manual, or routine occupations often fail to obtain work in green or neutral jobs after a job loss, instead leaving the workforce altogether. The authors conclude that the relatively high age of these workers, combined with low levels of education, may be contributing factors.

Secondly, the UK oil and gas workforce is mainly male (OGUK, 2021c), and gender may play a role in the search for re-employment. Men are consistently identified as having better re-employment outcomes than women across contexts (Andersson, 2015; Vinokur & Schul, 2002). Specific to the energy sector, women are in the minority in the heavily male-dominated oil and gas industry and, therefore, potentially at risk of reduced access to support and employment during energy transitions (Mohr, 2021; Walk et al., 2021; Baruah, 2017). Thus, various scholars advocate the need for more equal treatment of women as the net zero transition progresses, in case transition efforts exacerbate existing inequality (Allwood, 2020; Baruah, 2017; Mohr, 2021; Walk et al., 2021; García-García et al., 2020).

Thirdly, the UK oil and gas workforce is majority White (OGUK, 2021c). Thus, ethnicity may play a role in re-employment. Regarding ethnicity, Kanfer et al.'s (2001) meta-analysis found little relationship between ethnicity and re-employment success. However, a UK study based on data between 2009 and 2015 suggests that non-White ethnic minorities were more likely to face unemployment, delays in gaining re-employment, and wage penalties when work is found (Li & Heath, 2020).

2.6 Concluding summary

This chapter began by introducing the lens of structure and agency through which the re-employment success of UK oil and gas workers will be viewed; specifically, Margaret Archer's morphogenetic

approach was adopted, which enables the analysis of the influence of structure on agency. Structure was defined as the past, present, and future social and economic context within which an individual leads their life, and agency as the capacity to exert a force on this surrounding context to influence one's life events. The chapter then synthesised literature on the energy transition, the *Just Transition*, and re-employment, to propose the structural and agentic factors that could influence displaced workers' search for re-employment.

The first structural feature identified as relevant to oil and gas workers' search for re-employment was the job market. Quantitative studies estimating the employment impact of the net zero transition paint a promising picture of net job creation globally, even after job losses from fossil fuels. However, evidence of this phenomenon in the UK is less compelling, with ONS (2022) figures suggesting no significant increases in renewable energy employment up to 2020. Furthermore, even if enough jobs are created in renewable energies to replace those lost from North Sea oil and gas, the timing and geographical location of new jobs will impact individuals' access to them. Therefore, the availability of alternative job opportunities for displaced oil and gas workers in the UK is not clear.

The second structural feature explored was the evolving human capital requirements of the energy sector. Much research estimates that oil and gas skills should be highly transferable to renewable energies, particularly in the construction of offshore installations. However, skills transferability relies on the availability of significant reskilling initiatives. Furthermore, skills requirements are changing in response to automation, and interpersonal skills like communication and leadership will grow in demand. Therefore, the changing skills requirements of the energy sector are likely to influence displaced oil and gas workers' access to re-employment.

Thirdly, displaced workers may benefit from government and industry support in adapting to the changing job market and its changing requirements. The *Just Transition* literature highlights the need for early recognition of adversely impacted groups, proactive interventions to avoid harm, and reparations to those already harmed via economic and social support. The changing skills landscape means that assistance with upskilling or reskilling will be critical. The re-employment literature further suggests that job search training, coaching, and counselling may all be beneficial.

The review then turned to re-employment literature to identify factors that may enable the exercise of agency by displaced oil and gas workers. Psychological factors of self-efficacy and optimism are fairly consistently identified as enabling agency in re-employment. Further psychological variables include clear goals, adaptability, and an internal locus of control.

Practical resources were also identified as enabling agency during the search for re-employment, specifically good physical and mental health, strong social professional networks, access to financial resources during unemployment, and transferable human capital.

Finally, demographic characteristics of age, gender, and ethnicity may also influence how much agency workers have in seeking re-employment. However, individual-level re-employment research is largely positivist, using quantitative methods to measure antecedents of finding replacement employment. A qualitative approach, exploring the reality of what factors help and hinder the search for re-employment, and how, would be valuable.

The following chapter presents the methodology adopted in this study, to understand the relevant structural and individual-level factors that enable displaced oil and gas workers to exercise agency when seeking re-employment. The chapter will begin by presenting an overview of the study and its research aim and questions, before detailing the methodology used to study the research questions.

Chapter 3: Methodology

This chapter presents the methodology used for the study. The need for the study, based on the preceding chapters, is summarised, followed by a presentation of the research aims and questions. Research design decisions are discussed. The study's philosophical paradigm, pragmatism, is presented, followed by a discussion of the qualitative research approach and abductive reasoning strategy chosen to address the research questions. The chapter then presents key research design decisions including the interview study strategy, a cross-sectional timeframe, and the purposive sampling strategy, which targets two groups: oil and gas workers who have experienced job loss, and industry stakeholders. The practical research process is then described, which involved data collection via semi-structured interviews with 37 participants and the use of template analysis and abductive reasoning techniques to analyse the interview data. Finally, a reflexivity statement is presented to highlight the researcher's reflections on her own role in the processes of data collection and data analysis.

3.1 Research aims and questions

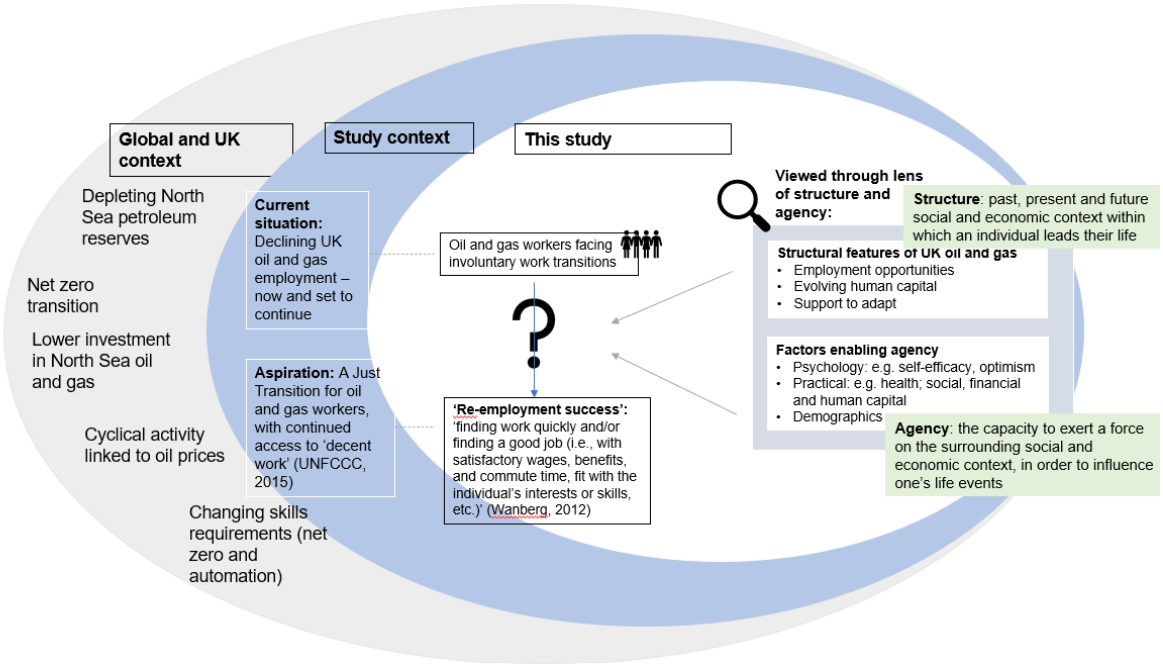
The overarching research aim of this study (Thomas & Hodges, 2010) is to understand the reality of a *Just Transition* for UK oil and gas workers, as perceived and experienced by the workers themselves. This study gives voice to the UK oil and gas workforce about their experiences of a *Just Transition*, which is operationalised in this study as the achievement of re-employment success (Wanberg, 2012). To achieve this research aim, the study adopts two specific research objectives (Thomas & Hodges, 2010), using the lens of structure and agency introduced in Chapter 2. The first objective is to understand the structural features of the UK oil and gas industry that may influence access to re-employment for displaced workers, as described by people working in the industry. The second aim is to explore how workers subjected to job loss can act with agency in this context, as the industry evolves and contracts. Thus, this study sets out to identify and describe the structural and agentic factors that influence access to re-employment for UK oil and gas workers facing job loss, and to explain how these factors work together to result in successful access to re-employment.

The first research question is: *'What structural factors influence access to re-employment success for workers displaced from the UK's oil and gas sector?'* According to the literature review presented in Chapter 2, the social and economic context of the UK oil and gas sector is likely to influence access to re-employment. In particular, the literature review suggests that the availability of alternative employment opportunities, the energy sector's changing skills requirements, and the availability of support to help workers adapt to the evolving employment context are anticipated to influence the search for re-employment.

The second research question is: '*In this context, what factors enable individuals to exercise agency in their search for re-employment?*' According to the findings of the literature review in Chapter 2, factors enabling displaced workers to exercise agency include psychological constructs, such as optimism and self-efficacy; personal situational variables, including physical and mental health, and social, financial, and human capital. This literature also suggests that demographic characteristics such as age, gender, and ethnicity may also play a role in access to re-employment.

Figure 3 presents a summary of the research context, aims, and key operationalisations.

Figure 3: Study overview



Source: Industry context summarised in the Introduction; literature reviewed in Chapters 1 and 2; researcher's interpretation

3.2 Research design

Research philosophy: pragmatism

Philosophical paradigms are sets of assumptions and beliefs about reality and knowledge, providing researchers with different lenses through which to view problems (Kuhn, 1962). The paradigm adopted in this thesis is pragmatism, which focuses on action and social justice (Gray, 2014a). The development of pragmatism into a practical, socially applicable ideology is widely attributed to social theorist John Dewey (1859–1952) (Ormerod, 2006; Pratt, 2016). For pragmatists, knowledge and beliefs are judged to be true when they result in tangible action that promotes social justice and freedom (Gray, 2014a). Thus, in pragmatist research, reality is whatever serves to address social problems: that is, reality is '*what works*' (Kaushik & Walsh, 2019, p3). Pragmatism, therefore, lends itself to social research that addresses practical problems (Kaushik & Walsh, 2019), as does this thesis.

Pragmatism's ontology and epistemology offer a holistic paradigm through which to explore human experience, even though its philosophy is often overlooked in favour of its methodological implications (Pratt, 2016; Morgan, 2014; Denzin, 2012). Ontologically and epistemologically, pragmatism integrates elements of both positivism and interpretivism (Kaushik & Walsh, 2019). Pragmatism's ontology aligns with positivism in that it accepts that some form of reality or realities exists that can be observed (Creswell & Clark, 2018). Its epistemology, however, is constructivist, holding that all knowledge and human belief about these realities is socially constructed (Kaushik & Walsh, 2019). Pragmatists acknowledge, but do not engage with, extended metaphysical discussion on the nature of reality and truth, which can only ever be hypothesised using socially constructed knowledge (Kaushik & Walsh, 2019).

The key features of pragmatism, summarised below by Kaushik and Walsh (2019), are congruent with this study in three ways. Firstly, pragmatist studies often start by identifying a real social problem to investigate through empirical research (Kaushik & Walsh, 2019). This process reflects the development of this study, which was devised in response to the current real-world problem of employment in the declining and evolving UK oil and gas industry. Secondly, pragmatism has strong links with justice, action, and research and promotes socially beneficial, practical outcomes (Gray, 2014a). This aligns with this study's focus on a *Just Transition* for UK oil and gas workers, and it aims to provide practical and useful information for the industry and for academics. Thirdly, pragmatism directly addresses the nature of structure and agency, the lens adopted by this study through which to view the experience of re-employment. Individual belief and action are at the core of pragmatism, but pragmatists hold that these are influenced by the social context (Morgan, 2014; Pratt, 2016; Garces, 2021; Kaushik & Walsh, 2019; Colapietro, 2009). This aligns with the study's Archerian approach, which views structure and agency as mutually influential but analytically distinct concepts.

In pragmatist studies, where action and social justice are the priorities, it is the research aims and questions that drive research design decisions, not the philosophy (Saunders, Lewis & Thornhill, 2019) and this approach will be adopted throughout this methodology.

Research approach: qualitative and abductive

Pragmatism is often associated with mixed-methods research (Gray, 2014a). However, it is ultimately up to the pragmatist researcher to make methodological decisions based on the requirements of the research questions (Morgan, 2007). For this study, which addresses complex and processual social questions, qualitative methods were judged to be most appropriate. A qualitative design is proposed to address the aims of understanding and explaining complex social processes within the context of a changing industry (Morgan & Smirchich, 1980). Qualitative research is appropriate for research questions that explore how events unfold and result in a specific outcome (Langley, 1999) and when

the research aim is to theorise explanatory links in a process that is too complex for quantitative research (Denzin & Lincoln, 1994; Huy, 2012).

Furthermore, although agency is often researched using quantitative methods (Brown & Lent, 2016), the use of scales to provide static measurements of narrow constructs is reductive and contradicts the generally accepted conceptualisation of agency as dynamic, complex, and embedded in a context (Emirbayer & Mische, 1998). Instead, qualitative research is more appropriate for researching the complex, nuanced mechanisms linking context and agency (Hollstein, 2015; Morgan & Smirchich, 1980; Huy, 2012). This follows the precedent of other studies that explore the complexity of the experience of job loss in a declining industry (e.g. Gardiner et al., 2009; Dobbins et al., 2014).

This study uses abductive reasoning as its approach to theory development. Abductive reasoning was pioneered by classical pragmatist Henry James Peirce (1903) (Saunders et al., 2019). The term abduction is defined in this study as '*a creative inferential process aimed at producing new hypotheses and theories based on surprising research evidence*' (Timmermans & Tavory, 2012, p167)[6]. Abductive reasoning is distinct from deductive and inductive reasoning, as outlined by Timmermans and Tavory (2012) and Graneheim et al. (2017). Deductive reasoning starts with a rule and seeks to confirm or discredit that rule (moving from the general to the specific). Inductive reasoning starts with observations and extrapolates to generalisations (moving from the specific to the general). Abductive reasoning, meanwhile, uses outcomes or consequences as a starting point and enables the researchers to hypothesise about the explanation behind these outcomes (summarised by Behfar and Okhuysen (2018) as moving from observation to explanation).

Abductive reasoning is relevant to this study for four reasons. Firstly, the roots of abduction lie in this study's philosophical paradigm, pragmatism (Behfar & Okhuysen, 2018). Secondly, reasoning also allows for the integration of existing theory and the interpretation of empirical data (Timmermans & Tavory, 2012; Graneheim et al., 2017). This is appropriate for this study, which focuses on empirical interview data, but also draws on the existing re-employment literature to help identify salient factors through the use of theoretical propositions and the initial deductive coding template. Thirdly, abductive reasoning has an explanatory aim (Behfar & Okhuysen, 2018; Timmermans & Tavory, 2012). This is congruent with this study's research questions, which seek to identify the contextual and agentic factors that lead to successful re-employment after job loss and explain how they interlink. Finally, abductive reasoning is appropriate for explaining novel data (Timmermans & Tavory, 2012, p167), which aligns with the scope of this study, as previous empirical literature has not yet been conducted on the interview population.

[6] For Peirce, '*surprising*' research evidence had two meanings: novel, and unexpected (Timmermans & Tavory, 2012). It is the former meaning, novel, which is relevant to the dataset collected for this thesis.

Research strategy: interview study and abductive reasoning

The research strategy is determined by the research aims and questions (Mason, 1996). The research strategy adopted is an interview study (Brinkmann, 2013). Interviews are essentially a dialogue between two people, effectively the oldest form of exchanging information (Brinkmann, 2013). Interviews offer participants an opportunity to describe their experience and express their views through language (Brinkmann, 2013), which are then interpreted by the researcher. This emphasis on language and interpretation makes interviews compatible with the study's empirical relativism, a feature of pragmatism's philosophy. An interview study strategy is congruent with the research aims and objectives, which focus on exploring the reality of a *Just Transition* as perceived and experienced by the UK oil and gas workforce. The interview strategy was strengthened by abductive reasoning during the data analysis process. The emerging results were tested by regular references to the academic and industry literature to sense-check emerging ideas and identify areas for improvement. This process is described in detail in Section 3.3.

The time horizon (Saunders et al., 2019) selected for data collection was cross-sectional. Cross-sectional studies provide a snapshot at a certain point in time (Saunders et al., 2019). A cross-sectional time horizon was chosen due to the relatively high number of participants (approximately 35 interviews were targeted during the study's design phase; 37 were conducted). The time horizon was also influenced by the novel nature of the research topic. As a new and rapidly growing area of literature that is lacking in empirical research, obtaining data rapidly was prioritised over collecting longitudinal data, which was judged to be a longer process. Furthermore, as agency involves an individual perception of the capability to act, rather than an assessment of change over time, cross-sectional data were judged to be appropriate.

Sampling strategy: purposive

The sampling strategy determines how participants are selected for inclusion in the study (Robinson, 2014). All participants were recruited purposively; groups of people that were expected to be able to contribute to the research aims were deliberately targeted (Saunders et al., 2019; Silverman, 2017). The actual participants then self-selected when they heard about the study and expressed a wish to take part.

Two groups of participants were included in this study's '*sample universe*' (Robinson, 2014, p2), which aimed to understand the participants' experience of the UK oil and gas industry and explore the factors associated with achieving re-employment success after job loss. Group 1 consisted of UK oil and gas workers seeking re-employment after job loss and those who have previously faced this experience and subsequently achieved re-employment success. Group 2 was made up of industry stakeholders, such as employers, the government, academia, trade unions, and industry bodies.

Although the study's unit of analysis is the individual, industry stakeholders were expected to be able to provide additional insight into the structural features of the UK oil and gas industry that may influence the experience of individuals seeking work.

The study claims to give 'voice' to UK oil and gas workers. The complexities of whether a researcher can ever faithfully give voice to participants has been addressed previously by qualitative researchers. Byrne (2017, p38) describes researchers as the '*instigator and author of the research story'*, who have a responsibility to clearly represent the key messages conveyed by participants during interviews. However, such interpretation and presentation by the researcher inevitably risks warping the meaning intended by participants (Pillow, 2003; Byrne, 2017). As such as risk is inherent in any researcher interpretation of qualitative data, and cannot be removed entirely, the solution to this limitation is to be clear about the researcher's role in interpreting participants' data (Pillow, 2003; Byrne, 2017). This is done in Section 3.4, where the researcher describes her role in the process of conceiving the study, collecting and analysing data, and writing up the final thesis.

Pilot study

An exploratory pilot study was conducted in the spring of 2020, as the original literature review and design proposal for the main study were being developed. At this time, the study intended to focus on Scotland's oil and gas industry rather than the UK as a whole. Five interviews with participants with professional experience in Scotland's oil and gas industry were conducted virtually. The three aims of this pilot study were to refine the study's research questions and theoretical propositions, to refine the research design and methodology, and to gain insight into the unique context of Scotland's oil and gas industry, including learning its language (Spradley, 1979). Reflections on this pilot study were integrated into the study's aims and scope, design, research questions, target participant groups, and interview materials.

3.3 Research process

This study aims to understand the reality of a *Just Transition* for UK oil and gas workers, as experienced by individual workers facing job loss. To achieve this, semi-structured interviews were used, defined as '*an interview with the purpose of obtaining descriptions of the life world of the interviewee in order to interpret the meaning of the described phenomena*' (Kvale & Brinkmann, 2008, p. 3). Semi-structured interviews allow the researcher to set the topic for the interview while allowing time and space for the interviewee to bring their own insights to the agenda (Kvale, 2007). Thus, the use of semi-structured interviews enabled a '*receptive*' interviewing style, characterised by giving participants *'a large measure of control in the way in which they answer the relatively few and relatively open questions they are asked*' (Wengraf, 2001, p. 154). Semi-structured interviews that adopted a receptive style were judged to be the most appropriate way of generating data to address the

research objectives of understanding the industry context as experienced by those in it, and the individual experience of finding work after job loss. This type of interview format enabled the researcher to set the general direction of the conversation while leaving the participant to control what and how much to share.

Designing interview materials

The interview materials comprised an information sheet, a consent form, and two interview protocols for use by the researcher. The information sheet (Appendix 1) and consent form (Appendix 2) were based on the key principles of the study's ethical approval: confidentiality, obtaining informed consent, and avoiding harm to participants (Gray, 2014b; Brinkmann, 2013). The interview protocols were designed based on the study's aims and research questions, the qualitative interviewing literature, the receptive interview style, and insights from the 2020 pilot study.

For Group 1 participants, the aim was to gather data on the individual experience of seeking work after losing one's job in the UK oil and gas industry. To address this aim, the interview schedule – attached as Appendix 3 – was designed in four parts. The first part of the interview protocol focused on asking just one question: 'Could you tell me about your career to date? Start wherever you like – for example, your first job, or school/university. You can have as long as you like to talk about this, and you can bring in anything that you see as relevant to your story.' This was designed to be supplemented by additional questions where necessary to help the researcher clarify understanding and help draw out information from participants with limited narratives. The rationale for this approach was that starting with a broad, descriptive background question can help to get the interview warmed up (Jacob & Fergerson, 2012; Spradley, 1979). Furthermore, biographical narrative interviews enable the discussion of a sensitive event like job loss in the context of the individual's wider career story, which helps the researcher understand their situation more holistically and avoids the overuse of direct, potentially upsetting questions about job loss before a rapport has been fully developed (Gabriel et al., 2013). This emulates several similar studies on job loss which adopted a biographical narrative interview strategy (e.g. Ezzy, 2000; Gabriel et al., 2013; Gardiner et al., 2009).

The second part of the interview for Group 1 participants shifted the focus from their wider career narrative to their experience of job loss and seeking re-employment. This was to explicitly clarify the topic for the rest of the interview (Spradley, 1979), which was their experience of seeking work after job loss. For participants who had already spoken a lot about this in their narrative, this part of the interview explicitly clarified the focus of the rest of the interview. For participants who had not spoken in detail about job loss and seeking re-employment, the researcher used prompts from their narrative to steer the conversation towards re-employment, before explicitly clarifying that this was the focus for the rest of the interview.

The third part of the interview focused on the structural and agentic factors of the experience. This involved asking for factors that the participants saw as either helpful or hindering. This approach was inspired by Spradley (1979), who recommended that asking for one example and then repeating the question were easier for participants than asking for *all* the barriers or opportunities at once. In later interviews, this section was also designed to be used for the researcher to try out some emerging ideas about important factors (e.g. the importance of a financial cushion to ease stress). The final part of the interview involved summarising the topics covered and asking if there were any topics not yet discussed that the interviewee thought should be covered or included in the study. Finally, demographic information was collected to gather salient characteristics of the participant pool.

For Group 2 participants, the aim was to gather data to aid in understanding the oil and gas industry context. The interview schedule, attached as Appendix 4, was also designed in four parts to address the study aims. Firstly, the interviewer asked the participant to share some information about their current role and/or their career in oil and gas. The aim was to start with broad, descriptive background questions to warm up and build rapport (Jacob & Ferguson, 2012; Spradley, 1979), and also to better understand the individual's experience and perspective to tailor subsequent questions. The second part of the interview focused on the phenomenon of job loss in the UK oil and gas industry, from the interviewee's perspective. The questions in this section were designed around the principles of asking broad, descriptive questions to encourage the participant to speak freely, and asking for examples and experiences to help build a picture of this phenomenon in this specific context (Spradley, 1979). The third part of the interview protocol was used to sense-check emerging analytic ideas with the participants, adhering to abductive interviewing principles which enable iteration between data and theory. Finally, the fourth part of the interview was used to summarise key discussion topics and ask the interviewee if there were further topics to be discussed.

Ethical approval

Ethical approval for the study and interview materials – the interview protocols, the consent form, and information sheet described above, attached as Appendices 1, 2, 3, and 4 – was obtained from Professor Andrew Godley, Head, Department of Leadership, Organisation and Behaviour at Henley Business School in October 2020. This ethical approval required consideration of key ethical principles to protect participants: confidentiality, obtaining informed consent, and avoiding harm to participants (Gray, 2014b; Brinkmann, 2013). The application of these ethical principles during the study will be discussed at relevant points of the data collection and management sections below.

Participant recruitment and characteristics

Sample sourcing involves gaining access to participants at a practical level (Robinson, 2014). Drawing on her previous professional experience, the researcher viewed the participant recruitment

phase as a sales and marketing exercise. Inspired by another PhD candidate advertising her studies on the social media platform Twitter, the researcher created a PDF flyer and a website for potential participants, to provide concise information about the study, generate interest, and lend a sense of legitimacy to the study. The PDF flyer is attached in Appendix 5. The study's website, www.findingworkafterjobloss.co.uk, was set up using a Squarespace account. The website, which has since expired, contained the same information as, and a similar design to, the PDF flyer.

The researcher then set about accessing potential participant populations to share information about the study. The main recruitment strategy for Group 1 was social media: Reddit, LinkedIn, Facebook, and Twitter. The researcher joined various UK-focused oil and gas communities on these platforms and shared posts about the study with group members. After a process of trial and error in finding the right groups, and gaining permission to join them, oil and gas communities on Reddit and LinkedIn in particular generated a lot of interest from potential participants. The researcher also shared posts about the study within her own personal social media networks. Although her contacts were largely not linked to the oil and gas industry, one contact shared a post with their network, many of whom were from Aberdeen, and this re-share generated a lot of interest from oil and gas professionals in the area. Snowball sampling, where participants helped to recruit more potential participants, was also used and was particularly effective on LinkedIn. Several participants put themselves forward for the study after seeing a contact share their experience of taking part in the interview.

For participants from Group 2, the industry stakeholders, the main recruitment strategy involved sending personalised invitations by email and direct message on LinkedIn. The researcher's first supervisor put her in touch with some potential Group 2 participants via email at the start of recruitment. More speculatively, individuals with job titles suggesting they could potentially contribute to the study's objectives were identified using online research on LinkedIn, organisational websites, and press sources, and were speculatively contacted by email or direct message on LinkedIn with an invitation to participate in the study. This approach proved to be highly efficient, and the majority of people contacted responded positively and participated in the study, as it was seen as an opportunity to discuss an industry problem urgently requiring action. One speculative email to a key industry gatekeeper was followed by a Zoom meeting to discuss the study, and this led to information about the study being shared with two industry-wide mailing lists of HR specialists and trade union representatives, both of which led to connections with several participants. Snowball sampling was used, although it was not as successful a strategy as it was with Group 1 participants.

Sample size is a nebulous issue for qualitative research, with little clear guidance available (Brinkmann, 2013; Robinson, 2014). In line with qualitative studies on the topic of job loss (Hallqvist & Hyden, 2014; Gardiner et al., 2009;), the targeted sample size was 20–30 for Group 1, individual participants with experience of seeking re-employment after job loss from UK oil and gas, and

approximately 15 individuals in Group 2, industry stakeholders. The final sample size was 37 interviews in total: 24 individuals from Group 1, UK oil and gas workers with experience of seeking work after job loss, and 13 individuals from Group 2, industry stakeholders. The final sample size was determined by theoretical saturation (Glaser & Strauss, 1967), defined as the point at which no new ideas or themes emerge from the data. The concept of theoretical saturation has been criticised as vague and undefined (Rowland et al., 2015). However, the general principle of continuing data collection until no new ideas emerged was applied to the interviews: the researcher continued to conduct interviews until she was confident that no new ideas were emerging from these conversations. Analysis of previous interview transcripts, conducted concurrently with the latter stages of data collection, further supported this conclusion.

Group 1 comprised a range of professions before job loss, from both roles based onshore and offshore, as shown in Table 1. The largest group by far was the 13 geoscientists (comprising geologists, petro-physicists, and geophysicists) who made up 54% of the participant pool. Three engineers and three operations/logistics/project managers each accounted for 12.5% of participants, with the remainder comprising one offshore medic, one electrician, one accountant, and one computer-aided designer.

For 23 of the 24 Group 1 participants, salient demographic information (age, gender, education) was collected; one participant declined to provide demographic information due to confidentiality concerns. The participants' age ranged from 32 to 62, with an average age of 45. This is in line with the average age of workers in the UK's offshore industry, 44.1 years (OGUK, 2021c). The majority of participants were men (91%), with only two women interviewed. This reflects the male-dominated nature of the industry: 23% of the UK oil and gas workforce are women, dropping to just 3.4% in offshore roles (OGUK, 2021c; Oil and Gas UK, 2018). Regarding ethnicity, only one participant was Black. This reflects the minority of non-White workers in the industry: an industry-wide D&I survey revealed that 84% of respondents were White, with 4% describing themselves as Black and 4% as Asian (OGUK, 2021c).

There was a high level of education among Group 1 participants. Twenty participants (87%) were educated to university level: three participants held an undergraduate degree, eight held a master's degree, and six held a PhD. The three participants not educated to university level (13%) had all completed apprenticeships and held professional qualifications such as Higher National Diplomas (HNDs) and National Certificates. This reflects the high skill level of the oil and gas workforce (Allan & Ross, 2019).

Demographic and educational information is not shown in Table 1, to protect the anonymity of participants, given that the world of UK oil and gas is small and closely networked.

Table 1: Individual participant roles before job loss ('Group 1')

Primary role prior to job loss	Number of participants
Geoscientist	13
Engineer	3
Operations/logistics/project management	3
Offshore medic	1
Computer Aided Designer (CAD)	1
Project finance	1
Offshore electrician	1

Source: Participant data

As shown in Table 2, Group 2 (industry stakeholders) included two HR managers, four trade union representatives, two skills experts, two former oil and gas workers, an industry consultant, an employment lawyer, and an academic. No demographic information was collected from Group 2 participants as it was not relevant to their contribution to the study.

Table 2: Industry stakeholder roles ('Group 2')

Role	Number of participants
Trade Union officer	4
Energy skills specialist	2
HR Management	2
Energy employment lawyer	1
Industry consultant	1
Academic	1
Previous industry workers	2

Source: Participant data

Organising and conducting interviews

The main phase of the interviews was conducted between autumn 2020 and summer 2021. The study's ethical approval required obtaining informed consent for participation (Gray, 2014b). In accordance with these requirements, all participants were emailed copies of the consent form and information sheet (Appendices 1 and 2) in advance of their interview. Each participant was required to send a signed consent form to confirm their participation in the study, although several participants sent a proxy approval by email confirming their agreement to the consent form, due to difficulties printing documents while working from home during the pandemic. Following receipt of informed consent, the interviews were arranged at a time and date convenient to participants, as the researcher's schedule was flexible.

As the global pandemic had removed the possibility of face-to-face meetings, the interviews were conducted virtually, mostly using Zoom software, which enables recording and was widely used and easily accessed by most participants. Microsoft Teams was also offered as a secondary option, which a small number of participants preferred. Group 1 participants, individuals either currently seeking work after a job loss or who had previous experience of this, were asked to set aside 60 to 90 minutes

for the interview. This was in recognition that discussing the personal experience of job loss might need time to build rapport and to create time for unplanned topics of conversation. Group 2 participants, industry stakeholders, were asked to reserve a shorter 30 to 60-minute slot in their diaries, depending on their availability. This was in recognition of the fact they made time for the interview as a professional meeting during their working day, at a time when online meetings were prevalent and experienced by many as a source of exhaustion during the pandemic (The Guardian, 2021).

The interviews began with personal introductions, a brief explanation of the study background and the interview procedure, as documented in the introduction scripts in Appendices 3 and 4, and answering questions. During the pre-interview discussion, the key points of the information and consent form, including the use and management of personal data, were highlighted again to participants. During this introductory process, a further key goal was to build rapport to facilitate a psychologically safe interview environment (Jacob & Furgerson, 2012; Guillemin & Heggen, 2009). Once the researcher judged that the rapport was strong enough to begin the interview, she asked again for approval to switch on the recording device. The interviews were conducted using the protocols attached in Appendices 3 and 4. However, these protocols were semi-structured, and interviewers should aim to elicit ideas and narratives from participants, rather than adhering to a list of specific questions (Holstein & Gubrium, 1995). Thus, throughout the interview, the researcher used her discretion to depart from the protocols when necessary to pursue unforeseen and potentially relevant topics (Jacob & Furgerson, 2012). Throughout the data collection, field notes were kept to document the specific context of each interview, the mood of the researcher, and preliminary ideas for findings (Barley, 1990; Spradley, 1979).

Interview dynamics

Interactions between the interviewer and interviewee are key to the quality of the interview (Holstein & Gubrium, 1995; Guillemin & Heggen, 2009). Thus, reflection on the interview dynamic is an important part of the data collection process (Brinkmann, 2013). Three issues are discussed here: the dynamics of the virtual environment, the interview style, and ethical issues arising in the interview environment. Firstly, the context of the interviews must be considered to aid in understanding the data gathered (Potter & Hepburn, 2005). The virtual environment was not judged to adversely impact the interviews. Indeed, virtual interviewing was viewed by the researcher as an asset to the study, as it was relatively easy to gain access to people when it might have been hard to organise face-to-face meetings requiring extensive travel. Furthermore, the proliferation of virtual meetings during the pandemic meant that most participants were familiar with the technology and with the experience of talking virtually.

Secondly, the interview style is an important part of the interview dynamic. An open, 'receptive' interview style (Wengraf, 2001), which puts the participant largely in control of the content of the interview, was adopted in the design and use of the interview protocols. To enable this receptive style, all interviews were conducted using principles described by Spradley (1979) and Jacob and Furgerson (2012): listening instead of talking; giving undivided attention to the interviewee; regularly summarising what has been said by repeating the interviewee's words back to them; demonstrating verbal and non-verbal engagement (e.g. nodding to indicate understanding), and explaining the reason for asking questions to help participants frame their answer (Spradley, 1979). This style gave Group 1 participants space to share their stories in the way they wanted to. It also allowed Group 2 participants to focus on different topics, depending on their unique position in the industry.

Thirdly, a good interviewer-interviewee relationship requires a conscious awareness of ethical issues, described by Guillemin and Heggen (2009, p291) as practising '*ethical mindfulness*'. Thus, during data collection, the researcher practised ethical mindfulness by prioritising the ethical principles of gratitude, rapport, respect, and avoiding harm to participants (Guillemin & Heggen, 2009; Gray, 2014b). As the interviews were virtual, physical safety was not a risk for either party, but the participants' psychological safety was potentially at risk of harm, as in any interview (Gatrell, 2009), particularly due to the sensitive nature of the interview topic. The researcher used several strategies to practise ethical mindfulness. Firstly, on a personal level, she was deeply grateful to each participant for their generosity in sharing their time and experiences with her. At each stage of contact – before, during, and after data collection – the researcher was explicit in her gratitude for their participation, both by email and during the conversation (Costley et al., 2010). Secondly, the researcher prioritised the creation of rapport with each interviewee, both to create a comfortable interview environment conducive to psychological safety, and to demonstrate her respect for the participants (Robson, 2000; Guillemin & Heggen, 2009).

However, overuse of rapport to generate insightful data can create a power imbalance between the interviewer and the interviewee, potentially causing the person being interviewed to share more than intended (Guillemin & Heggen, 2009). Thus, managing rapport in an interview situation requires awareness and management of personal boundaries (Guillemin & Heggen, 2009).

For Group 1 participants, an ethical risk of harm from participation arose as the interviewer asked them to share information of a personal, sensitive nature (Gatrell, 2009). For participants in this group, speaking about their experiences of job loss was judged to be a sensitive topic and it was important to create an environment of trust (Brinkmann, 2013). This required the researcher to identify sensitive topics through an awareness of the interviewee's verbal language, body language, content, and style of speech, and to adjust her questions and responses accordingly (Guillemin & Heggen, 2009). When a topic was judged to be sensitive, the interviewer adopted an empathetic,

supportive style (Brinkmann, 2013). This empathetic style involved using body language (e.g. nodding to indicate understanding) to demonstrate active listening, matching her tone of voice and body language to that of the participant, and keeping relatively quiet as they spoke to provide a neutral space. She expressed sympathy when she judged this to be appropriate, but was conscious of avoiding over-expression of sympathy, which could be interpreted as patronising.

The risk of harm to the participants in Group 2 was considered to be negligible as they were being interviewed about the industry rather than their personal experiences. Ethical interviewing strategies focused on balancing rapport and respect, adopting a friendly but professional style, and managing the interview timings to ensure courteous and productive use of the participants' time. For this group, a more conversational interview style was adopted when judged to be appropriate (Brinkmann, 2013), allowing the researcher to provide some information about the preliminary findings in reciprocity for the stakeholders' participation.

For both groups, the researcher again used ethical mindfulness (Guillemin & Heggen, 2009) to reflect on whether the interviews had been conducted successfully and without harm to participants. This involved evaluating the rapport developed before and during the interview; the quality, content, and dynamic of the conversation; and, for many participants, reflections on the interview either verbally at the end, or by email afterwards. Several participants across both groups described having enjoyed participating in the interview. For Group 1 participants, the interview gave them a chance to reflect on their personal experiences and was described by several as cathartic or therapeutic (Haynes, 2006). For Group 2, the interview gave them the chance to speak candidly about the industry in a confidential environment, and to gain insights into the study's aims, scope, and potential findings.

However, practising ethical mindfulness can highlight uncertainty about having done the 'right thing' (Guillemin & Heggen, 2009, p298). One issue around participant safeguarding (Gatrell, 2009) arose after an interview with a Group 1 participant, an individual who was unemployed at the time and seeking work. The interviewer was concerned about the mental health of this participant due to the nature of some comments and jokes made during their interview and raised this issue in discussion with the study's supervisors. The research team concluded that although he did seem to be unhappy, this was due to his life circumstances rather than the interview process, which was not judged to have exacerbated the problem. Furthermore, he had spoken at length about the support of his family environment, from which the researcher inferred that he had adequate social support. The researcher briefly considered sharing information about mental health resources but concluded that this risked offending the participant by misinterpreting the situation or offering unwanted help. Instead, as with all participants, an email was sent emphasising the researcher's gratitude for the interview, enjoyment of the time spent talking together, and an open invitation for a virtual coffee if they ever wanted to talk to someone outside the industry.

Data management

Clarity over how the participant data are stored, managed, and used is an important part of quality research (Cassell, 2010). During data collection, the interviews were recorded on Zoom or Teams accounts. The researcher then transcribed all interview data recordings verbatim, using Otter software. Transcription did not include detailed conversational interaction between the interviewer and interviewee, such as 'um' and the specific timing of silences, as such detail was not relevant to the study's aims and research questions (Sacks, 1992). The transcribed interview transcripts were then used for the data analysis process described below.

Protecting participant confidentiality and anonymity were priorities of the data management process. In the pre-interview recruitment phase, the names and email addresses of participants and potential participants were stored in social media direct messages (LinkedIn, Reddit, Facebook) and a university email account to which only the researcher has access. During data collection, recordings were made on Zoom or MS Teams on a password-locked device that was only accessible to the researcher. To maintain participant anonymity, any identifying names or information were pseudonymised or redacted from the transcript. The interviewees were given a letter of the alphabet as a pseudonym to enable data management of a high volume of interview transcripts[7]. All audio recordings and transcripts were stored confidentially in a password-locked computer. The participant consent forms were stored in a separate folder from the interview data and contained no information that could be matched with any specific audio recording or transcript. Adhering to the ethical requirements of the University of Reading, the interview recordings will be destroyed following completion of the PhD. However, as stated on the study's information sheet, the anonymised transcripts may be obtained after the end of this degree to enable further analysis for the publication of journal articles.

Template analysis

The transcribed interview data were initially analysed using template analysis (King, 2004a; King and Brooks, 2017). Template analysis is a specific form of thematic analysis that is similar to Braun and Clarke's (2006) approach to thematic analysis in its flexibility and its focus on the creation of a hierarchical coding scheme (Brooks et al., 2015). However, for template analysis, an initial template of themes is usually devised after a small subset of the data has been coded, which is then applied to the rest of the data[8]. Like all thematic analysis, template analysis is agnostic of any one

[7] In hindsight, the alphabetical system got confusing when the number of participants exceeded 26, and the alphabet had to start again in double letters; subsequent interviewees were named AA, BB, etc. Numbers would have been a simpler system.

[8] In contrast, according to Braun and Clarke's (2006) guidelines, a first draft of the coding structure and themes is only created after all the data have been coded (Brooks et al., 2015).

epistemological or ontological position; thus, it is congruent with the study's pragmatist philosophy (Brooks et al., 2015; King et al., 2018).

Template analysis offers three benefits for the objectives and nature of this study. This allows for the use of *a priori* codes with a deductive coding template based on existing theory – which remains flexible and open to change – as well as additional layers of sub-codes for deeper analysis ((Brooks et al., 2015; King, 2004a). This enabled the integration of ideas from the previous literature alongside findings from the interview data, which is congruent with abductive reasoning (Graneheim et al., 2017; Mirza et al., 2014; Saunders et al., 2019). Secondly, it offers a structured approach to the analysis of large volumes of data, enabling efficiency while allowing for flexibility of the data and aims of the study (Brooks et al., 2015; King et al., 2018; King, 2004a). As noted by King (2004a), this helped the researcher to manage the tension of remaining open to the data while taking an organised approach to the large volume of data from 37 interview transcripts. Thirdly, template analysis is not overly prescriptive: it is flexible and has few required features, so the researcher is open to adapting it to their data and purpose (King, 2004a). This enabled the researcher to focus coding on the interview excerpts that were most relevant to the research question (Brooks et al., 2015). This was a useful feature for this study, which generated a large amount of data from participant narratives and industry stakeholders, requiring the researcher to be selective about topics and focus on the coding that was most relevant to the research question.

The initial stages of data analysis were based largely on the template analysis framework described by Brooks et al. (2015). The researcher also followed recommendations from Brooks et al. (2015, p207) that each researcher should draw '*selectively*' on sources that suit the needs of their specific study to develop their own idiosyncratic process.

Transcription of interview recordings serves as an initial phase of data analysis (Riessman, 1993). During transcription, notes about initial ideas for themes were kept, adding to the field notes taken during the interviews. Although some transcripts were analysed immediately, in others, there was a delay between transcription and analysis, and the researcher re-familiarised herself with the data by re-reading the transcripts while listening to the interview recordings.

In tandem with transcription, an initial deductive coding template was created that contained *a priori* codes based on the research questions, ideas from academic and industry literature, and results of the pilot study. A code has been defined as a '*theme or issue in the data which the researcher has identified as important*' (King 2004a, p257). *A priori* codes are tentative only, to be refined, added to, or deleted as the analysis progresses (Brooks et al., 2015; King, 2004a).

The preliminary deductive coding template was applied to three transcripts initially, after which the researcher updated the coding template by amending the existing codes and adding new ones

generated from her interpretation of the interview data. Both descriptive and interpretive codes were identified, and many passages of text were parallel-coded, where the same excerpt is coded to multiple codes at once (King, 2004a). At this early stage, no *a priori* codes were deleted. Amendments to the coding template during the initial round of coding also included the identification of relationships between codes and the creation of a coding hierarchy. A coding hierarchy is an important feature of template analysis, with various codes gathered together into overarching codes, or themes (King, 2004a). This allows for both higher-level issues and analysis of detail. It is up to the researcher how many levels of code to include, according to their data and aims (King, 2004a), and at this early stage, only two levels were created.

This process of amending the coding template was repeated after the analysis of approximately every five transcripts. Each time, the researcher refined the coding hierarchy, added new codes, identified key emerging themes and relationships, and refined the coding template accordingly for ongoing application. After around 15 transcripts, few changes were made to the higher-level themes, and amendments to the coding template focused on lower-level codes and the relationships between codes. The codes were clustered into higher-level themes or were moved down to lower-level codes, according to the researcher's interpretation (King, 2004a). Some codes that were not prevalent were moved into an 'obsolete' folder to remove them from ongoing analysis but to keep them available in case they were detected in later transcripts. The field notes that were kept throughout the data collection and transcription were used to supplement and sense-check developing codes and themes during this phase (Barley, 1990; Spradley, 1979).

For many template researchers, time and resource constraints require them to reach a final version of the template to be applied largely unchanged to all further transcripts (King et al., 2018). However, because of the time available for this PhD study, the iteration of the coding template continued over approximately 12 months, allowing the creation of a more in-depth coding matrix (Brooks et al., 2015). Once all the transcripts were analysed, the coding template was applied for a second time to all the templates to sense-check its robustness and completeness. There is no definitive version of any coding template: a researcher could continue to refine and adapt the coding template infinitely and must decide when the template is '*good enough for the purpose*' (King, 2004a, p263). Thus, the coding template was finalised at a point when it was judged to represent the detail and key themes in the interview data.

Further analysis and write-up of results

Ultimately, the coding template is not a final version of results to be presented directly, but merely a tool to help interpret the data (King et al., 2018). Furthermore, the write-up phase is an important stage of analysis in itself (Brinkmann, 2013; King, 2004a). Thus, analysis continued beyond the creation and use of the coding template, and into the writing-up phase, where the hierarchy of themes

and relationships between codes were further iterated, and a conceptual model was developed. As a result, the final themes and sub-themes do not map exactly to the final coding template. For example, many changes were made to the thematic hierarchy and relationships between codes, and some themes were removed at this stage[9].

Four analytic devices were used during the final analysis and write-up to aid the interpretation of the higher and lower-level themes and the relationships between them. Two analytic strategies outlined by Langley (1999) were used as tools to further refine the themes and analysis during the write-up. Firstly, a visual mapping strategy was used to create online mind maps using Coggle software, along with pen and paper diagrams and the creation of models using PowerPoint. This helped the researcher to visualise and explain the relationship between factors. Secondly, a narrative strategy was used to help ensure that each participant was represented in the final themes. A table was created of each participant's pseudonym and key demographic and professional information, and brief bullet-pointed notes highlighted the key features of their narrative and interview data. This was referred to during the write-up as another device to sense-check the validity of the findings.

Two further strategies drew on abductive reasoning principles. Firstly, the study's abductive reasoning approach entails a '*recursive process of double-fitting data and theories*' (Timmerman & Tavory, 2012), that is, moving iteratively between data and literature throughout the analysis to refine the explanation of the phenomena concerned (Pratt, 2016). For Alvesson and Kärreman (2007, p179), this specifically involves identifying discrepancies between data and theory and persevering to understand why these discrepancies have arisen. Therefore, the themes were continually compared with other sources to help create results that were complete and robust. The academic literature was regularly re-reviewed to understand the role of self-efficacy in agency, as this was not interpreted to be a clear theme in the participants' narratives. Three further data sources were used to check emerging themes and relationships. Firstly, the iterative process of data collection and analysis allowed the researcher to sense-check the initial findings with participants as data collection progressed. Secondly, field notes and a reflexivity diary kept during data collection were used to scrutinise and supplement findings emerging from formal analysis (Willig, 2013). Thirdly, the issue of declining employment in the UK's oil and gas industry is highly topical, and relevant reports were published throughout the course of this PhD degree (e.g. *Just Transition* Commission, 2020, b; 2022; OGUK, 2021a, b). Thus, although the analysis of secondary data is not a formal element of the study's methodology, governmental and industry reports were continually reviewed to sense-check the researcher's understanding of the findings regarding the industry context.

9 An example of this was a theme capturing cynicism about 'greenwashing' by oil majors, which was captured in the coding template but not included in the final write-up as it was not judged to be directly relevant to the research questions.

Secondly, the process of abductive reasoning involves identifying phenomena that do not '*fit*' as expected and persevering to hypothesise about the factors that could explain this (van Maanen et al., 2007, p1149). Abductive reasoning happens continually throughout the analysis process, as new surprises arise as models develop (van Maanen et al., 2007). For example, it became clear that the role of human capital in finding re-employment was more complex than simply having a high level of education, as suggested by human capital theory (Becker, 1993). To achieve this process of hypothesising, the abductive researcher must create an environment that facilitates the exploration of surprising or unexplained phenomena and offers thinking space to aid the interpretation of results (Timmermans & Tavory, 2012). Creating time to think and iterate, including periods of familiarisation, is at the heart of such an environment (Rinehart, 2021; Reichertz, 2010). This was an important part of the analysis process as initial models had time to percolate, enabling the researcher to realise if something was missing or did not make sense. Since the analysis was conducted in stages over several months, in tandem with university teaching responsibilities, the researcher had time to reflect over the long term. In the short term, the researcher also created time for thought and analysis: for example, by dedicating full days to analysis even when the actual work took four to five hours, and going for walks to think ideas through even further (Rinehart, 2021). This allowed ideas to percolate and evolve. Conversely, at certain points, the analysis also benefited from time pressure to produce regular outputs for conferences and supervisions. In abductive reasoning, time pressure can disrupt the usual thought processes and force more pragmatic, '*intuitiv*e' analytic decisions (Rinehart, 2021, p305). Finalisations of the results went on throughout the write-up.

3.4 Researcher reflexivity statement

A key consideration in qualitative research is that the results are the interpretation of the researcher. Evidence of reflexivity on the researcher's role is a necessary element of transparent and rigorous research (Haynes, 2006; Gatrell, 2009). For this study, researcher reflexivity is particularly important because of its use of abductive reasoning and template analysis. The process of abductive reasoning involves the researcher using the tools and resources they have available to make inferences about the data and generate hypotheses - including the researcher's cultural and social background (Timmermans & Tavory, 2012). Thus, in abductive reasoning, the researcher's background plays a role in their interpretation of the data and production of results. Secondly, reflexivity is important for template analysis, which is a generic form of analysis that does not adhere to any specific philosophical requirements that may influence the coding and theming process (King, 2004a; King et al., 2018). Therefore, the researcher is specially charged with reflecting on and articulating their role in the analysis (King, Brooks & Tabari, 2018).

The researcher felt that most elements of her personal and professional background were an asset to the data collection process. Firstly, she is originally from Scotland and has lived in London most of

her adult life, which helped to build rapport with the participants, many of whom had lived or worked in Scotland or London. The researcher did not perceive her age and gender as influencing the interview dynamic. Secondly, she has no personal experience of job loss but strived to mitigate this with curiosity and empathy when interviewing individual workers. Thirdly, she has a professional background in finance and organisational psychology, and an academic background in the study of careers and the working lives of individuals. Therefore, she lacks personal experience of working in the oil and gas industry. However, this meant that the researcher remained free of her own biases from any personal experiences in the industry. Fourthly, the researcher holds a diploma in coaching skills, which made the adoption of a receptive interview style (e.g. the use of open questions, repeating the participants' words back to them, holding a neutral space) relatively easy to apply consistently. The researcher sees herself as having a naturally friendly personality, which made it generally easy to build rapport. However, as observed by Guillemin and Heggen (2009), creating too much rapport can create a power imbalance in the interview dynamic. To mitigate this, the researcher took reflexivity notes that reflected on the interview dynamics and what she could have done differently after each interview.

The interviews were conducted during the Covid-19 pandemic, when much of the researcher's work and social life was conducted online. As a result, a common problem was that she frequently felt tired, and worried that she would struggle to focus and be adequately attentive in the online interview environment. Again, reflexivity notes were used to document this process. A change made as a result of these notes was that the researcher cleared most of the day when one or more interviews were scheduled, to build up energy before, focus fully on the interview without other tasks to worry about, and allow time to relax afterwards. Although this was not a time-efficient strategy, it helped to boost the researcher's energy and confidence in advance of the interviews, which she felt improved the quality of the interview dynamic. During transcription and analysis, the researcher did not notice any evidence of tiredness or lack of attentiveness when listening to the interview recordings.

The researcher also influenced the process of data analysis and the initial design of the study. She had a strong reaction to the *Just Transition* literature upon first encountering it, and throughout the study, the researcher has felt highly motivated to produce a PhD thesis that would contribute constructively to this conversation and offer practical recommendations to the industry and academia. Thus, the researcher's motivation to produce practical, action-focused findings applicable to the industry may have influenced the study's results. Furthermore, she was inspired by the concept of agency and by the participants' narratives, and used her own challenges throughout the lockdown to sense-check the robustness of her model of having agency in a difficult situation. This may have unintentionally influenced the model. Three steps were taken to reduce the researcher's influence on the study's results. Firstly, the abductive approach and integration of the existing literature offered the chance to sense-check emerging ideas and highlight areas that might be missing from the developing analysis

(for example, self-efficacy). Secondly, as the analysis was conducted concurrently with the interviews, the researcher tested the developing ideas with the participants by describing her thought process and asking for feedback. Thirdly, she discussed the developing ideas with the project supervisors.

However, despite efforts to reduce the researcher's influence, such as conscious reflection, it must be noted that a key limitation of the study is that it is the interpretation of one person, and someone else would have produced a different set of results. Despite the reflections documented in this section, these are the researcher's conscious reflections only. The researcher will likely have unconsciously impacted the study's design, process, and results in ways she is not aware of (Whitehouse-Hart, 2012).

3.5 Concluding summary

This chapter began with a summary of the academic and real-world background of the study, leading to the overarching aim of this research: to explore the reality of a *Just Transition*, as experienced by UK oil and gas workers seeking work after job loss. This aim was formulated to inform industry practice as well as academic literature. To achieve this aim, two research objectives were introduced: understanding the industry context as described by people working in and with the UK oil and gas industry, and understanding the experience of individuals seeking work after job loss from the industry. The rest of the chapter presented the methodology used to achieve the research aim and objectives.

Firstly, the study's philosophical paradigm, pragmatism, was presented, which aims to produce research resulting in action and social justice. A qualitative research approach was chosen to address this complex social issue, and an abductive reasoning strategy was adopted. Abductive reasoning is congruent with the study's explanatory research objectives and enabled the use of the extensive resources of *Just Transition* policy research and the empirical re-employment literature in the analysis of the interview data. An interview study strategy with a cross-sectional timeframe was selected to give voice to the workforce; this provided a novel perspective in a field dominated by normative academic theory and policy recommendations. A purposive sampling strategy was selected, targeting two groups of people who were anticipated to contribute to the study's aims: oil and gas workers with experience of job loss, who could share their experiences of seeking re-employment, and industry stakeholders, who could comment further on the context.

Following the presentation of these design decisions, the research process was documented in detail. The process of collecting data via semi-structured interviews with 37 individuals (24 individual workers, and 13 industry stakeholders), and the use of template analysis and abductive reasoning principles to analyse the transcribed interview data were discussed. Finally, a reflexivity statement

was presented, to highlight how the researcher felt she had influenced the processes of data collection and analysis.

Chapter 4: Findings

Analysis was guided by the study's two research questions. Firstly, what structural factors influence access to re-employment success for workers displaced from the UK's oil and gas industry? Secondly, in this context, what factors enable individuals to exercise agency in their search for re-employment? To address these research questions, semi-structured interviews were carried out with 24 oil and gas workers with experience of job loss, and 13 industry stakeholders; and analysed using the methodology described in Chapter 3. This chapter presents the findings of this process of analysis.

Section 4.1 presents analysis relevant to the first research question, seeking to identify the structural factors that influence access to re-employment success for workers displaced from the UK's oil and gas industry. Three themes capturing the industry's boom and bust nature; its future of decline, evolution and uncertainty; and the unique industry culture are analysed. In Section 4.2, these findings are synthesised to respond directly to Research Question 1.

The remainder of the chapter presents analysis relevant to the second research question: identifying the factors that enable the individual to act with agency in the search for re-employment after job loss from UK oil and gas. Section 4.3 analyses the individual-level, 'agentic' resources – health, coping and job search resources - which were interpreted as supporting an individual to act with agency in the search for re-employment. Additionally, three further forces interpreted as influencing the exercise of agency in the search for re-employment, while remaining out of the individual's control: luck, time and demographics. Section 4.4 synthesises these findings to respond directly to Research Question 2.

Finally, in Section 4.5, an explanatory model is proposed, based on findings to both research questions. This model captures the agentic factors, and forces out of an individual's control, which enable agency in the search for re-employment after job loss from the unique context of UK oil and gas. It is based on the analogy of climbing a mountain used by one participant to describe their search for re-employment.

In line with the definitions of structure and agency introduced in Chapter 2, the analysis of structural features focuses on the social and economic context of the UK's oil and gas industry; and the analysis of agency focuses on the focuses on the individual-level factors that influence an individual's capacity to exert a force on their social and economic context in their search for re-employment. As clarified in Chapter 2, whether a concept is perceived as structure or agency depends on perspective (Fuchs, 2001). Therefore, overlaps occur between factors identified as structure and agency throughout this chapter; most notably human capital, which is presented both as a structural feature of the highly skilled oil and gas industry and as an individual-level resource.

4.1 Structural features of UK oil and gas influencing access to re-employment

Three themes were created to reflect the structural features interpreted as influencing an individual's access to replacement work after job loss: the UK oil and gas industry's boom and bust nature; its future of decline, evolution and uncertainty; and its unique culture. These themes, and sub-themes within them, are displaced in Table 3.

Table 3: Structural themes and sub-themes

Theme	Sub-theme
I) Boom and bust	• Cyclical nature • Low job security • Covid-19 downturn
II) Decline, evolution and uncertainty	• Decline and evolution • Delay to job creation in renewable energies • Stigma and bureaucracy • Uncertainty over future jobs and skills
III) Industry culture	• A unique and challenging environment • Aberdeen • Highly networked • … and highly paid • '*Stale, male and pale'*

Source: Researcher's interpretation of participant data

Theme I): Boom and bust

The boom and bust nature of the UK oil and gas industry, and resulting low job security, was interpreted as exerting a strong influence on access to re-employment for displaced workers. Primarily, the cyclical nature of the job market was understood to influence access to replacement employment by impacting the number of jobs available. This volatile employment market results in low job security, even for workers on permanent contracts. Therefore, low job security was further interpreted as impacting access to re-employment success due to the toll on an individual's mental health.

Three sub-themes are presented to explore the theme of 'Boom and bust': the industry's cyclical nature; the low job security that results from it; and the Covid-19 downturn of 2020 as an example of this.

Cyclical nature

A prominent feature of the UK oil and gas industry is its cyclical nature. Industry activity has long been characterised by periods of boom and bust linked to oil prices. These cycles of boom and bust are semi-regular, as observed by Participant W; and have a swift and strong impact on employment, as summarised by Participant O below.

> *'20 odd years in, in oil and gas, I think I've been through seven downturns…. they're roughly every three to four years. That's, that's the norm.'* (W, operations)

> *'there's like a magic number for the barrels of oil in particular that you need to make for companies to make enough of a profit to keep going… and then when it dips below that, which it did this year, that equates to job loss in significant numbers very, very quickly'* (O, employment lawyer)

This cyclicality has a significant impact on individual's working lives. Indeed, many participants defined key moments in their career by the price of oil: *('when I took my first job, it was about $9 a barrel…*' - AA, geoscientist). This cyclicality impacts the individual's access to re-employment because of its impact on the job market. During upturns, jobs are generally widely available, and an individual seeking re-employment is likely to have relatively good access to work opportunities. During downturns, companies can fold overnight; the tap '*turns off*', and jobs disappear. This creates a hostile employment climate for people losing their jobs, particularly as the job market is flooded with others in the same position. Providing contrasting examples of the impact of the industry's cyclical nature, participant U recalled the ease of finding work during an industry upturn; while F painted a vivid picture of the impact of one industry downturn.

> *'After 2001, when they went into Iraq, I mean, the oil price was huge… there was so much work, you couldn't turn it down. I mean, you could literally turn out of Company One on a Friday be back working for another one on a Monday… the ups and downs of the oil industry are totally out of your control. And you're just on this rollercoaster ride.'* (U, geoscientist/engineer)

> *'it was all mapped out in front of us… and then all just fell apart. So it wasn't just myself. It was a lot of people in that chain, as you can imagine, it all sort of unfurled and came crashing down.'* (F, offshore electrician)

The cyclical nature of the industry, and its link to oil prices, means that up- and downturns are, to some extent, predictable. For example, exploration jobs such as drilling are the first to disappear, as exploration efforts do not generate income and costs are cut immediately. This signals a downturn to those working later on in the production chain of working fields. Several participants described seeing the writing on the wall for their own jobs when signs of a downturn became apparent earlier in the chain. However, this predictability is short-term and does not provide a long lead time for workers to prepare themselves for unemployment and job seeking. R, a trade union representative, summarised the impact of the industry's cyclical nature, and corresponding low job security, as harmful and not sustainable for workers and society.

> *'this boom and bust approach can't go on. And I think this particular downturn, and, and… the pandemic has enlightened me to the point that, you know, we need a different model, the model we've got, is not going to sustain employment, it's no going to it's no going to help*

society generally. In my opinion, at least, we're failing workers, we're failing society' (R, trade union officer)

Therefore, the industry's cyclical nature, characterised by cycles of boom and bust, was understood to have a significant impact on an individual's access to re-employment opportunities. During upturns, alternative employment opportunities are plentiful. During downturns, opportunities in oil and gas are reduced significantly, as well as in other connected industries. This is closely linked to Theme III), which acknowledges how opportunities in other industries in the Aberdeen area are also impacted by oil and gas activity on the area's economy.

Low job security

As a result of these cycles of boom and bust, low job security is a hallmark of the UK oil and gas industry. Job security varies, to some extent, for different roles and parts of the industry. For example, exploration work (for example, geoscientific exploration and drilling) is inherently contract-based: contracts come to an end once the site has been explored or developed into production, and workers must move on to find a new project. Meanwhile, contracts for production work – operating and maintaining offshore structures over a period of years – can be longer term and more stable. Level of job security also depends on the employer's position in the supply chain. According to one industry analyst, staff turnover is relatively low for asset owners, and much higher for the large, contract-dependent supply chain supporting them.

However, for most workers, job security is low, regardless of their type of employment contract or level of seniority. While contract work was described as offering particularly low job security, even permanent staff jobs provide no real security against redundancy during downturns, when costs must be cut urgently. Meanwhile, level of seniority makes little difference: participants described an industry where low job security pervades all rungs of the hierarchy and levels of experience.

Therefore, it is common for an individual to go through multiple redundancies in their career. Indeed, job insecurity is so high that one participant described it as a relief to not have a job, in order to not be at risk of redundancy. Participant J described the impact of this for early-career workers, while participant A described the fear of job loss now present throughout the industry.

'a number of people… had been made redundant twice, three times in the last seven years, that's a lot for somebody under the age of 35, to have had happened to them. And that was right the way across the board' (J, industry skills expert)

'at the end of the day, <u>everyone</u> is scared for losing their job. It's, it used to be no one lost their job, but… 2015… bubble had bust up. Absolutely burst and everyone - we came through that and, then, again, it's happened with the added influence of Covid, and it just - people are living on their nerves.' (A, project management/management)

This prevalence of low job security can result in a certain sense of solidarity, and some comfort in not being alone in the experience of job loss. But, as described by Participant C below, the flipside of the high volume of redundancies at one time also results in stiff competition for the few jobs available during downturns.

> *'I guess knowing about the sheer volume of people would have been certainly a bit of a challenge because every single post would have had a mad amount of competition, even like jobs at Tesco I applied for and got nowhere with, you think, there's just, just so many people. '* (C, logistics and operations)

The industry's endemic low job security creates a power imbalance between the worker and their employer, particularly during downturns. Employers were described by a number of participants as lacking long-term planning with regards to their workforce; instead, hiring and firing workers as necessary for short-term profitability. Several participants described employers as propagating a culture of hiring and firing in service of their commercial models.

> *'Turned up my check-in one day and there's 16 hours of us about to fly out and we're all checked in, boots, put our survival suits on, somebody walked in from HR from the office and gave us all our letters and told us to go home, we all got made redundant on the spot…. they gave us the letters - opened them at the time, we just get told we're getting made redundant and we went okay.'* (P, offshore medic)

The individual worker is powerless in the face of this employment context: '*they're… spoilt for choice… it's an employers' market*' (A). Participant P described '*the insecurity of not being able to say no to a job, of having to take everything that's offered*'. In this climate, many individual participants interviewed felt used and abandoned when they were made redundant, and treated '*like a commodity*' (BB). Participant Q described finding this experience very difficult.

> *'You're just chucked out. But then they want you back in a drop of a hat…You can buy a long term rail ticket. They end your job… And then you only get back so much of the money, you don't get the full.... they don't help you out, and you're just on your own. Then they want you back again. I've literally got no money to buy a rail ticket, you know, that's how bad it can get.*' (Q, Computer-Aided Designer ('CAD'))

Industry stakeholders described employers' efforts to be respectful and supportive during the process of redundancies; and several workers described generous redundancy packages which helped them during unemployment. However, some workers perceived no duty of care for employees made redundant. One HR representative acknowledged that these practices have led to wasting talent in the industry, as people seek better working conditions.

'we've been… extremely wasteful in terms of our talent. You look at the number of people who have left the industry for various different reasons, and it's probably far higher than other industries (V, HR manager)

Situations are highly changeable: people can be rehired as quickly as they lost work; but this uncertainty is unhelpful as people are unable to plan financially. This culture of low job security means that consistency and stability is both highly coveted, and largely unattainable (although for some, the flexibility of short-term contracts outweighs its disadvantages).

'the one thing that I think everybody craves after they've been laid off and even when people are being laid off, if you keep your job - all people want in the oil industry is consistency and employment and consistency in their income… I think a lot of people would be willing to take a pay cut if it were to remove the risk of being laid off… it's a huge problem in the industry' (B, engineer)

In summary, the industry's endemic low job security was interpreted as creating a significant source of stress for many of its workforce. This is closely linked to the theme of mental health, which is an important resource for any job seeker, as analysed fully in Section 4.3. Therefore, the impact of low job security on mental health was interpreted as impacting access to re-employment success.

Covid-19 downturn

The global economic downturn of 2020 triggered by the Covid-19 pandemic started just prior to, and continued contemporaneously with, data collection for this study. This period provides an example of the impact of an industry downturn on workers' access to replacement jobs; albeit an unprecedented example.

To contextualise the 2020 downturn, the oil price crash of 2014 had been particularly difficult, with reduced industry activity and employment lasting until 2016, and continued economic reverberations until around 2019. However, prior to 2020's global pandemic, the industry's recovery from this crash was in progress, despite change on the horizon due to net zero efforts. Therefore, the impact of Covid-19 was unexpected and unprecedented. The shock of the 2020 downturn after the industry's recent recovery was described by various participants, including Z and J.

'*we were starting to feel a bit more optimistic. We were seeing the oil price going back up. There was a sense of that's it, we're over the 2014-15 crash*' (Z, geoscientist)

'Employment was steady, there seemed to be a good pipeline of work…there was definitely always going to be change afoot, but it was seen as a little bit further out… very much, there was a lot of life in the North Sea region…. when Covid hit, it was combined with… the low oil and gas price as well. And it just plummeted and it felt, that we haven't really even just come

out of the last downturn and we were into one again. And that really hit people hard. Because although it's a very, people talk about it being a cyclical industry, it has never happened so quickly before.' (J, industry skills expert)

When the Covid-19 pandemic hit in Spring 2020, demand for oil plummeted along with oil prices. This created an immediate and unprecedent impact on the industry, described as a '*downturn on steroids*' by participant W. Much investment in projects cancelled or delayed indefinitely, an effect which has continued into 2021. As described by participant J, the true scale of the impact on jobs was difficult to measure, due to the prevalence of contract workers not requiring redundancy, and with furlough masking the impact.

'we're very much aware of the challenges that the oil and gas workers are facing at the moment. And we've got circa 10,000, out of work at the moment, and that's just in hard data. But when you actually… there's a lot of contractors working there, the number is far, far greater, the impact is far deeper. So, we're very concerned about it.' (J, industry skills expert)

Although employment prospects depends on the specific role, the overall employment situation in oil and gas was poor at the time of interview. Most job-seekers described few jobs available, many people out of work and lack of clarity over when this unprecedented situation will improve.

'I've applied for 30 jobs in the last three weeks, I've had six replies, or feedbacks. That's never happened to me before. I've always had, either we'd like you in for an interview, positive feedback or something like that. It's going into thin air. And these are all roles that I am perfectly adapted to. … But yet, there's no feedback…. I've spoken to a few people. They're having the same.' (W, operations)

Therefore, the Covid downturn provides an extreme example of the impact of a downturn on employment opportunities, with most participants who were job seeking during this time described significant challenges in finding replacement work.

Theme II): Decline, evolution and uncertainty

The second structural theme captures the industry's status of decline, evolution and uncertainty. This status was interpreted as having a strong influence on access to re-employment for workers after job loss in two ways. Firstly, the changing nature of the energy sector impacts both alternative job availability in oil and gas; and workers' access to jobs in clean energy production. Meanwhile, uncertainty about the future of the energy sector - the jobs that will be available in the future, and the skills that will be required – was interpreted as reducing workers' access to alternative employment opportunities currently, as well as their agency in longer term career planning.

This theme is presented in four sub-themes: decline and evolution; delay to job creation in renewable energies; stigma and bureaucracy; and uncertainty over future jobs and skills.

Decline and evolution

Most participants agreed that the future of UK oil and gas will be characterised by decline, due to depleting natural resources. This quote from participant G provides a clear illustration of this.

> *'So you go back to the industry in the past… this industry has only gone one way since, you know, over the last decade, it's got smaller. And it's only going to go one way in the future. It's getting smaller'* (G, academic)

However, participants agreed that the UK oil and gas industry is likely to still exist in some reduced form for as long as it generates profits. Therefore, many oil and gas companies are seeking to evolve into holistic energy companies, integrating both petroleum and renewables. This evolution will impact the workforce, who will be increasingly expected to be able to transfer between different areas of the energy sector with agility. Participant I described the changing shape of the industry's commercial structure, as it declines and diversifies.

> *'I think we talk about energy in silos: you can move into renewables, you can move into wind, move into hydrogen. But actually, your traditional oil and gas companies, many are still are actually operating in that space… versus divesting their portfolios. So that they are now predominantly wider energy companies than traditional oil and gas'* (I, trade union officer)

Furthermore, the influence of automation on jobs with routine elements was described by industry stakeholders as a significant risk. The impact of automation was described by participant J as having been exacerbated by pandemic, when companies developed ways to operate offshore rigs with fewer staff. Therefore, automation is another feature of the evolving energy sector which may impact availability of job opportunities for those in more routine roles.

> *'There was always the threat of digitalization for [offshore] jobs. And that was… an undercurrent before COVID. But what's happened now is the sector has accelerated their… digital transformation, probably they reckon by about five years…'* (J, industry skills expert)

However, oil and gas workers are lacking support to adapt their working lives and careers in this evolving industry. In a changing and uncertain employment environment, trade union representatives described a lack of tangible progress in creating justice for workers displaced from their roles. They described current *Just Transition* efforts as being conducted done '*piecemeal, different, in different voices' (I);* with no overarching leadership or cohesion. Therefore, despite much industry rhetoric about the need for a *Just Transition*, job-seekers are lacking support to help them transition into new jobs as the energy sector evolves. As observed by R,

'it's a lack of leadership… there's nobody taking ownership of it….. Everybody sitting in these, these groups, and there's no collaborative approach… no, joined up piece… the transition'll happen, but there'll be nothing just about it, unless we sort it, unless we change it' (R, trade union officer)

Therefore, the industry's current and future status of decline and evolution was interpreted as influencing workers' access to re-employment success after job loss. The changing shape of the industry, with oil and gas companies diversifying into wider energy companies, and automation, are both factors which may reduce the workforce's access to employment opportunities. Support is needed for oil and gas workers to adapt their work and career paths to a changing industry; but so far, this support is lacking.

Delays to job creation in renewable energies

The net zero transition offers promising alternative work opportunities for oil and gas workers; for example, in decommissioning, nuclear energy and carbon capture and storage. Most significant, renewable energies was described by many participants as a particularly large source of jobs in the future. Industry stakeholders interviewed expressed confidence that high volumes of such green jobs will be created, and that oil and gas workers should be well positioned to take these opportunities. Several workers described their wishes and efforts to transfer to cleaner energy production (although only one participant interviewed had already done so successfully).

However, analysis suggested that there is a delay to significant levels of job creation in renewable energies and other forms of clean energy production; and significant numbers of jobs are not expected to be created for some years. Predicted volumes of jobs have not yet been created in enough volume to offer employment to significant numbers of oil and gas workers. This creates a significant barrier to re-employment to oil and gas workers seeking to transfer their oil and gas experience to renewable energies. For example, employment in renewable energies did not offer a '*silver bullet*' to replace the significant volume of job losses caused by the 2020 downturn in oil and gas employment. This is illustrated in these quotes from industry stakeholders J and G.

'there's going to be a real time lag between the opportunities that are potentially now and those that we're talking about in hydrogen and carbon capture storage, which, if you're looking, in 5 to 7 years out to those jobs, and then you're looking at 10 to 15 till there's volume of work' (J, industry skills expert)

'there will be huge amount of jobs in the… renewable sector…. there will be more jobs by 2030, by 2040. But not in the next few years. We have a dislocation in the market versus more people coming out of oil... it is not going to be a smooth process necessarily' (G, academic)

Thus, the delay to significant levels of job creation in clean energy production, particularly renewable energies, was interpreted as reducing displaced oil and gas workers' access to alternative employment in these areas.

Stigma and bureaucracy

In addition to lack of job creation, two further barriers to obtaining employment in renewable energies were identified: stigma of oil and gas workers; and offshore bureaucracy.

Stigma of oil and gas workers was identified as a barrier to accessing work in renewable energies. Some participants speculated that this may be due to the stigmatisation for being fossil fuel workers. Participants described the 'them and us' mentality between oil and gas and renewables, with W comparing oil and gas workers as the modern day coal miners, and U describing being seen as the 'dirty cousins' by renewables. Therefore, stigmatisation of oil and gas workers was interpreted as potentially reducing their access to employment opportunities in clean energy production. This is illustrated in these quotes from S and U.

> *'there's a humongous amount of talk… there's a humongous push for renewable sectors to use oil and gas guys… [but] I know the guys from drilling side, they've really really struggled to get a job.* ' (S, driller)

> *'if you think it's hard getting a job out of nuclear it's 10 times worse coming from oil and gas to wind…. from a realistic point of view, the actual transferable skills, I mean, offshore construction and engineering is offshore construction and engineering. You know, it's a universal skill …. But I, myself have had this with wind. And I know friends of mine who have come from oil and gas to try and get into wind. We cannot, we cannot get in, at all.'* (U, geoscientist/engineer)

Bureaucracy was also interpreted as reducing access to alternative employment opportunities for offshore workers. Workers require rigorous certificates to adhere to offshore health and safety standards, which must be renewed at regular intervals, at a cost of several thousand pounds. While employers will pay for employees, unemployed or self-employed workers must bear these costs themselves. This places a large financial burden on workers who have been out of work for some time.

Despite similarities in the training required, there is a lack of synergy between the certification required for oil and gas and renewables structures. Thus, a worker hoping to be eligible for oil and gas and renewable work has to organise and pay for two sets of certificates, covering largely the same knowledge; a bureaucratic burden that is costly and time-consuming. Participant P described their situation regarding this:

'*The main [barrier to working on renewable installations] is having to retrain and do the renewables survival course. They won't accept an offshore survival for oil and gas industry, you have to redo the renewable survival course, which is basically the same course. Same training trainer, same equipment the same…. the only difference is that they do a section where you recover people from the cell inside a wind turbine. Which would be fine if they said, you can just do that module, and then we'll give you... But they're shooting themselves in the foot because a lot of people like me, won't do the course… so they're making it quite difficult for people like me to transition across*' (P, offshore medic)

Therefore, stigma of oil and gas workers for their association with polluting energy sources, and unnecessary bureaucracy for offshore installations, were both interpreted as potentially reducing oil and gas workers' access to work in clean energy production.

Uncertainty over future jobs and skills

In this evolving energy sector, workers will need new skills as oil and gas companies develop into holistic energy companies, and as the nature of some jobs change due to automation. As articulated by participant J,

'*we need to become continuous learners… this existing workforce in oil and gas… we need to support them to understand that you will have to continuously learn, adapt and evolve. And although you completed your degree three years ago, you might need to do a postgraduate certificate in this, or you might need to do a short course in that. And actually, that's an expectation that you'll have to do that throughout the course of your career as well*' (J, industry skills expert)

Indeed, some oil and gas skills were described as being directly transferable to other industries. For example, participants described using their offshore experience to help lay telecoms fibre under the North Sea; and the synergy between oil and gas licensing with council planning. Notably, most participants agreed that there is a great deal of skills synergy between oil and gas and renewables, and that most oil and gas skills are transferable to renewables. This is illustrated by the quotes from industry stakeholder participants I and J, below.

'if you've got somebody working as a turbine technician, there's an awful lot of similarities between somebody who's working offshore as a rope access electrician. It's not a change in the jobs. It's the changing of the kit' (I, trade union officer)

'I did a study purely on decommissioning skills … one of the key findings of that was that … oil and gas skills [are] very transferable. It shouldn't need much to upskill individuals into those areas… actually a lot of this is about change of mindset, behavioural change, … [not] about the applicability of the technical skill in a different context.' (J, industry skills expert)

However, some roles have less transferable skills; for example, several geoscientists in highly specialised technical roles described themselves as having skills that could be transferable to other industries. Therefore, the transferability of someone's existing skillset was interpreted as directly impacting their access to work both now and in the future.

Due to the delay in job creation described in the previous sub-theme, it is not yet clear to most participants what nature and number of renewables jobs will be available in the future. This lack of clarity is leaving workers and their support systems uncertain about what steps to take in terms of training and career direction. This reduces agency in the search for re-employment, as individuals are not able to form a clear plan for reskilling.

> *'Constantly, we hear about green jobs, and I keep saying to everybody, well give us a list of these green jobs. And nobody can do it. Or, let us see the new jobs that are there. We constantly get members coming back to us and saying how do you transition into renewables? And there's nae roadmap there for them to actually do that…'* (I, trade union officer)

This uncertainty and lack of clarity creates a significant human capital risk for the evolving energy sector. Industry stakeholder participants agreed that oil and gas expertise must be harnessed for the continuing oil and gas benefit of growing renewable energy industries in the North Sea. However, there is a risk that much of the oil and gas industry's human capital will be lost from the energy sector altogether. The delay in creating significant numbers of jobs in renewable energies creates a real risk that the oil and gas workforce will find employment in other sectors during downturns, and take their valuable human capital with them. Not only is this detrimental to renewable energies, but also to continuing oil and gas production when the industry picks back up. Trade union officer M reflected on workers' needs to find work in more stable industries, and HR Manager K reflected on the importance of retaining the oil and gas human capital.

> '*if people get made redundant from these jobs… they'll then look for how can I find a job using my skills locally… the best possible pay and conditions I can get. And then if they realise that outside of the industry they're in, the pay is significantly different, then they'll leave that industry and they won't go back and… they'll either adjust their lives, to suit the new earnings longer term, or they'll look to reskill even more and move into a different industry'* (M, trade union officer)

> *'a lot of the skills required are very much the same… it's really, really important for the industry that we capitalise on the skills that we have... you have some really key expertise, that is hugely valuable for the energy transition... So we need as an industry, we need to make sure that we leverage all of that, and, you know, harness the, harness the benefit of that as well.'* (K, HR manager)

Thus, the lack of clarity over future job availability, and skill requirements, was interpreted as impacting workers' access to replacement employment. This is because workers are unable to create clear plans for reskilling efforts, or to repivot their career paths. This can therefore reduce access to quality re-employment in both the short-term and longer term.

Theme III): Industry culture

The third structural theme, *Industry culture*, analyses the impact of the UK oil and gas industry's culture. Similar to the first two structural themes presented, this was interpreted as mainly influencing workers' access to alternative employment; and, in the case of money, their mental health.

The theme is presented in five sub-themes: the unique and challenging industry environment; Aberdeen; highly networked; highly paid; and '*stale, male and pale*'.

A unique and challenging environment

The UK oil and gas industry offers a unique, and challenging working environment. For many of its workers, this creates a strong sense of pride and identity in their accomplishments, particularly in the offshore environment.

The worlds of onshore office work and offshore work on rigs and platforms were described as being very different places to work. Onshore work is office-based, and in many ways, comparable to an office job in any industry. Offshore work involves working in difficult and dangerous conditions in the North Sea, with much time spent away from home. Each one is a silo. Participant F illustrated this through their description of the dynamic between onshore and offshore teams:

> *'There used to be an us and them sort of environment with onshore and offshore. And I was always, like, I used to tell the guys - just phone them. And there would always be a reluctance because there was this perception that they were really busy, and they didn't want interrupt somebody at their desk. Whereas when I was onshore, I seen the guys, they were, they would love the guys offshore phoning them, because it gives them a better understanding and idea of what's going on. So, there was just a huge disconnect.'* (F, offshore electrician)

The challenges of offshore life were a common theme in workers' narratives. For offshore workers, rotas are an integral part of their working lives, with a significant impact on their personal lives as much time is spent away from home. Several participants shared stories of missed birthdays and Christmases.

However, the demanding environment of offshore was also valued by many for its level of challenge and adrenaline. It was described as a strong source of identity and pride for its workforce. This can result in a reluctance to leave and pursue other opportunities in other industries during industry downturns and periods of unemployment. Participants B and S both illustrated this in describing their

enjoyment of offshore work and the difficulties in finding alternative work, in other industries, to replace it.

> *'I really enjoy my job. I really enjoy what I do offshore. And I think I would struggle to find something with the same kind of challenge'* (S, driller)

> *'It's not for everyone but very few other industries have such a balance of technical and physical work challenge these days… we are given a challenge, either to produce more oil/gas or safely abandon a well, during the following days or weeks where 24 hours of focus is given to the job and when it is complete, you do get a sense of accomplishment, which I think becomes quite addictive… With the work life balance we have and the lifestyle we can afford as a result, overall I think many people love to hate the industry. It's hard to describe, but many people would be lost without it'.* (B, engineer)

Therefore, the unique and challenging environment of UK oil and gas – particularly offshore work – was interpreted as potentially impacting access to re-employment success in other industries. This is because some workers are reluctant to leave oil and gas, with its high levels of pride, identity, challenge and fulfilment (and pay, as explored below). However, several participants also recognised the necessity of changing industry due to the long-term decline of oil and gas, even if they would ideally stay.

Aberdeen

A second cultural feature of the UK oil and gas industry that was interpreted as impacting access to re-employment is the importance of Aberdeen. The oil and gas industry is global, with many people interviewed having travelled extensively around the world for work. However, in the UK, Aberdeen remains the epicentre of the industry and employment, as highlighted by participant J (although there are offshore operations throughout the UK, and London is a hub for office work).

> *'I'm sort of born and bred… in Aberdeen, everyone's families are, somebody works in the oil and gas sector, it's very close to who you are. And I know that you'd probably be looking this across UK, but I do think there's quite a regional place aspect' (J,* industry skills expert*)*

Aberdeen and wealth generated by the oil industry have long been synonymous, and its economy is intertwined with the cyclical nature of the oil and gas industry. At the time of data collection, the city was described as broadly declining, in contrast with its wealthy heyday. This is illustrated in these quotes from participants T and R.

> *'there's no magic ticket anymore… there's no magic thing it's just, especially oil and gas up in Aberdeen'* (T, project accountant)

> *'when I came back to Aberdeen in the November, I couldn't believe, the guest houses that I'd used had shut down. Hotels just didn't exist anymore. Pubs, bars, restaurants - I thought, what has happened to this city? You know, this city was booming when I left in June… And we've certainly seen that through 2015,16,17, it was just began to come back up again.'* (R, trade union officer)

The importance of Aberdeen was interpreted as having a significant impact on an individual's day-to-day job hunt. During an upturn, not living in or near Aberdeen can limit an individual's employability, because of the need to be immediately available for last-minute offshore work opportunities. Conversely, the concentration of oil and gas employment in Aberdeen means that during industry downturns, job seekers in the area may find themselves more disadvantaged than people living in more diversified areas. When industry activity is low, there is a surplus of workers and few opportunities within oil and gas. There is also reduced employment in other local industries, which are impacted by the local economic impact of an oil and gas downturn.

Therefore, the importance of Aberdeen to UK oil and gas industry activity was interpreted as having a significant impact on an individual's access to replacement work. Access to employment in the Aberdeen area is enhanced during industry upturns; and constrained during industry downturns.

Highly networked

The UK oil and gas industry was described by many participants as being small, and highly networked. Social networks are a core part of oil and gas industry culture, and a common source of job opportunities, as described by Participant Z below. Therefore, this was interpreted as an important cultural feature impacting access to re-employment. Most participants described finding work through connections, via LinkedIn, contacting old colleagues or socialising. One participant described getting a previous role through people they met in the pub. As articulated by participant Z,

> *'the oil industry does not use the official channels… it's through word of mouth, basically… you're hired by your friend'* (Z, geoscientist)

The highly networked core of the industry extends to the collaborative, teamwork nature of the day-to-day work. Geoscientist X described the need for camaraderie with colleagues in the tough offshore environment. Paradoxically, the UK oil and gas industry is also an individualist environment, with individuals striving for career success. Participant W describes this below as creating a highly competitive environment.

> *'you have to get on with everyone… when you go offshore, you're on a boat, you're on a rig, or you're travelling, so you're used to having a slightly ironic, warped sense of humour.'* (X, geoscientist)

> *'when you get into oil and gas, it's a dog eat dog world. Everyone's scrambling over everyone to get the next position to get the next up and move up the ladder. So that's a very hard thing to get used to when you're coming from a military background. And I had to learn very quickly because otherwise I was going to be trodden on.'* (W, operations)

A caveat to the utility of social networks is that are only valuable when they can be accessed and leveraged. For example, during the 2020 pandemic, with people working from home rather than in the office and with networking events cancelled, it was not possible to draw on the opportunities of in-person networking. Furthermore, during industry downturns, an individual's network can be hard to leverage when there are no job opportunities to connect them with. Social networks are therefore only useful in supporting an individual's access to replacement employment during more buoyant times, when employment opportunities can be accessed.

Ultimately, professional social networks were judged to have an important impact on an individual's access to replacement employment. This is due to the highly networked nature of the industry, and the common experience of finding job opportunities through social contacts. However, social networks only hold value for the job seeker when they can be accessed and leveraged. Therefore, they lose value during industry downturns when few opportunities are available.

…and highly paid

UK oil and gas has long been known as a well-paid industry[10]. This has resulted in a culture of high salaries, and correspondingly high expenditure. Money was therefore was interpreted as impacting workers' experience of unemployment, and their process of finding re-employment. Generally, during industry upturns, access to work and money is plentiful. However, industry downturns can cause serious financial repercussions, with many workers suddenly unable to keep up with their well-paid lifestyles and financial obligations after job loss. This was described in a vivid image by Participant S.

> *'There's a very stereotypical offshore worker..., they've got a shiny new Audi, sitting on their shiny new house... it's an earned stereotype…. there's a lot of people like that… In 2016, there was a bit of an oil crash and the price went down to about 20. Loads of people got paid off. And the Audi garage in Aberdeen couldn't find enough places to park all the cars. They filled their whole yard, the whole street outside and people were just dropping the car off and posting the keys through the letterbox… because they couldn't afford to pay the finance anymore.'* (S, driller)

[10] Notably, this depends on one's position in the supply chain: according to one industry stakeholder, salaries are generally high at operating companies and asset owners, whereas service companies further down the supply chain pay less well

However, as industry activity has declined throughout the 2000s, so expenditure has reduced, calling into question relevance of the industry's reputation for extravagance today. Participant T articulated the impact of this.

> *'it's not what it used to be… oil and gas used to be crazy money…. big parties, stupid expenses. And of course that's just been curtailed completely.'* (T, project accountant)

The industry's gradual decline has changed the meaning behind the high salaries. High income now represents, at least in part, compensation for the industry's lack of job security, offering workers the chance to save money for almost inevitable periods of redundancy. For example, contract worker S described the need to save income to cover inevitable periods of redundancy.

> *'I'm still getting paid well. You know, I'm not, I'm under no illusions that we get paid really, really well. And the reason we get paid really well is because you're going to be working for, like this well, this job goes till July, then I've got nothing planned after that. So you get paid well, because potentially that could be it for your year.'* (S, driller)

For individuals who manage their income effectively and manage to set aside savings, the high levels of pay can enhance their agency during periods of unemployment in two ways: by reducing stress, and providing some breathing room to find a new opportunity. However, for those who do not manage to build up a financial cushion prior to job loss, and who struggle more for money during unemployment, may be forced to take employment rather than waiting for an opportunity; and can also suffer from the stress of money worries, impacting mental health.

The industry's infamously high salaries play another role in the search for re-employment. For individuals seeking work in other industries, oil and gas workers feel '*pigeonholed*' by other industries, because of assumptions that they will return to lucrative oil and gas work when the market picks back up. This is despite the evolution in recent years of oil and gas which no longer involves such high expenses. This pigeonholing was understood to reduce oil and gas workers' prospects of gaining employment in other industries, as described by participant U.

> *'I found it impossible to change industries, because conversations with multiple recruiters… they all said to me the same thing. They said, you're only doing this because there's a downturn, the minute the oil industry comes back, you're going to leave.'* (U, geoscientist/engineer)

In summary, the industry's high pay levels were interpreted as directly influencing both an individual's experience of unemployment, and their access to re-employment. Those who manage to build a financial cushion were understood to have improved access to better quality replacement employment: they were able to take some breathing room and spend time finding quality re-employment. Those who did not manage to create a financial cushion were understood to be under

greater pressure during unemployment to find any work to earn money, and therefore at risk of accepting poorer quality employment. Furthermore, other industries' perceptions of high levels of oil and gas pay can potentially reduce workers' access to employment in other industries.

The stress and mental health issues caused by the industry's relationship with money, and the impact of this on the exercise of agency, is a theme explored in more detail in Section 4.3.

'Stale, pale and male'

The UK's oil and gas industry is fairly homogenous*:* industry workforce analyst CC described the industry as predominantly '*stale, male and pale'*. Despite progress in in diversity and inclusion efforts, the industry as traditionally been dominated by workers who are '*male, White, of a certain age*' (CC).

The industry is '*stale*' in that it is dominated by older workers, with traditional working practices. There is a tendency to do things the way they have always been done, despite the innovation available in the energy sector, as evidenced by these quotes from DD and W.

> *'it's kind of weird, because… since there's this cutting edge technology… And then in other ways, there's just, like, not being really open to like, thinking… and wanting things the way they've always been.'* (DD)

> *'the leadership style that I've seen in oil and gas is very authoritarian…. It's improving. There's no doubt about it. And that's a good thing. But it was very, very old school when I got there. It's prehistoric some would say in the way that people were being treated and looked after and what have you.'* (W, operations)

The industry is still largely '*male and pale*' in terms of its demographics. Several participants described how more women are entering and remaining in the industry, to its benefit, but the industry is still ethnically homogenous. This was raised by several participants, but highlighted most clearly by participant DD, a Black individual who preferred not to share any demographic information which would make them immediately identifiable to industry contacts[11].

> *'I don't know how you're going to anonymize me because like, I'm just one person. There's, there's not that many people who look like me, in the industry… [on a form] I would say [ethnicity], but I don't think you should put that, just put Black. Yeah, because if you say [ethnicity], they'll know it's me.'* (DD)

Despite promising noises about diversity in the industry, several participants described how the rhetoric does not yet match the reality and the industry is still stuck in the past in this respect. Thus,

[11] Also for confidentiality, DD's role is not listed next to their quotes

while the industry may be improving in its demographic diversity, it is still a largely traditional industry, still dominated by White men.

> *'it's like everything in oil and gas… we're very good at talking the talk. So we'll say that we are not racist, we say that we don't have age issues and all the rest of it. But underneath and behind the scenes, that's not necessarily true… we say what needs to be said. But what in reality is happening is, is somewhat different.*' (W, operations)

Therefore, the predominance of a '*stale, male and pale*' demographic was interpreted as potentially influencing access to replacement employment opportunities. This was because individuals meeting this description may be more at an advantage in the oil and gas job market. However, analysis relating to the exercise of agency in this context, in section 4.3, indicates that the real impact of an individual's demographic characteristics on their search for re-employment is more complex than the industry's *pale, male and stale* culture suggests.

4.2 Response to Research Question 1

Section 4.1 presented analysis of the findings related to Research Question 1, what structural factors influence access to re-employment success for workers displaced from the UK's oil and gas sector? Findings were analysed in three themes: the industry's boom and bust nature; its current and future status of decline, evolution and uncertainty; and its unique industry culture. This section synthesises these findings to provide a direct response to Research Question 1.

Primarily, structural features of UK oil and gas were interpreted as influencing workers' access to re-employment success by impacting their access to alternative employment opportunities. All three themes were identified as influencing access to alternative employment at a practical level.

Firstly, the industry's cyclical nature was understood to have a strong impact on access to alternative employment opportunities in oil and gas. The industry's semi-regular periods of boom and bust were interpreted as having a strong influence on access to alternative employment opportunities. During upturns, alternative employment opportunities are plentiful for those seeking work after job loss. During downturns, opportunities in oil and gas are reduced significantly. An extreme example of an industry downturn was caused by the global pandemic of 2020, which was ongoing during data collection for the study. The impact of these economic cycles is exacerbated by the concentration of industry activity in Aberdeen: workers in the area enjoy enhanced employment opportunities during upturns, and poorer prospects in most industries aligned with oil and gas during downturn.

Secondly, the oil and gas industry's status of decline, evolution and uncertainty was interpreted as influencing - largely impeding - workers' access to alternative employment in clean energy production, particularly renewable energies. The industry is in a period of decline and evolution as oil and gas production winds down due to depleting natural resources; as net zero efforts progress; and as

automation changes the availability of more routine roles. While some level of oil and gas work is likely to be available for as long as the industry remains profitable, most companies are evolving as they seek to diversify into broader energy companies, with many aiming to integrate renewable and clean energy production into their portfolio. However, there is a lack of clarity over the jobs that will be available in the future, and the skills workers will require to obtain them.

In the future, significant levels of jobs are expected to be created in renewable energies. However, at the time of data collection, delays to this job creation meant that there did not exist sufficient volume of work to absorb the many oil and gas workers who suffered job loss during 2020's industry downturn. Several industry stakeholders interviewed estimated that significant volumes of jobs would not be created until around 2030. Therefore, lack of job creation was interpreted as reducing oil and gas workers' access to jobs in renewable energies.

Regarding human capital, many oil and gas skills are - at least in theory - transferable to renewable energy production, as well as other industries beyond the energy sector. However, skill requirements in the energy sector are evolving and are still unclear. Many participants described uncertainty about the jobs that will be available in the future energy sector, and the skills that will be required to access them. This lack of clarity was interpreted as reducing workers' access to alternative employment opportunities in the energy sector, as it is not clear what jobs to select to start to build a sustainable career. This was also understood to reduce their agency in longer-term career planning, because they lack clear goals to work towards, reducing their ability to make decisions about reskilling.

Two further barriers were identified as reducing oil and gas workers' access to employment in renewable energies as the sector evolves. The perceived stigmatisation of oil and gas workers by renewable energy employers for their association with pollution was perceived to reduce their chances of obtaining work. Furthermore, unnecessary bureaucracy and duplication of qualifications for working on oil and gas and renewable offshore installations also created a barrier for accessing renewable energy work. Duplication of the qualifications required to work on oil and gas and renewable energy offshore installations creates significant extra costs. This reduces worker's ability to move agilely between oil and gas and renewable installations, and increases their incentive to stay in oil and gas.

Thirdly, some key features of the UK oil and gas industry were also understood to impact an individual's access alternative employment, both within and beyond oil and gas.

The highly networked nature of the UK's oil and gas industry was identified as having a strong influence on access to opportunities: many jobs are found through informal contacts rather than through official channels. However, the power of social networks may lose strength during industry downturns when few jobs are available. Therefore, social networks were interpreted as improving

access to oil and gas work during upturns. Furthermore, the predominance of a '*stale, male and pale*' contingent in the UK oil and gas industry may influence an individual's employment prospects in oil and gas, with individuals who are older, male and White potentially gaining access to more job opportunities; although analysis presented in Section 4.3 suggests that the reality may be more complex.

Regarding re-employment opportunities beyond oil and gas, workers who derive a strong sense of identity, pride and challenge from oil and gas work – particularly offshore workers - may be deterred from moving to other industries where the level of job satisfaction and remuneration may not be equal to oil and gas.

Meanwhile, the highly paid nature of oil and gas work was a double-edged sword. The industry's notoriously high pay levels mean that many workers perceived employers outside of the energy sector as judging oil and gas workers to be unreliable, only looking for work during downturns and will return to oil and gas work during upturns. Therefore, participants described the industry's high pay levels as reducing their access to work in other industries. Conversely, it provides a financial advantage which helps people to cope better with unemployment. The high pay of oil and gas gives workers an opportunity to build a financial cushion for likely periods of redundancy, which can reduce stress and the need to take lower quality employment after job loss.

Practical access to alternative employment opportunities was interpreted as the primary way structural features of UK oil and gas impact access to re-employment. However, a second issue was identified: the industry's impact on mental health. The industry's cyclical nature results in endemic low job security, which can create a high level of stress for both employed and unemployed workers. Furthermore, in this highly paid industry, any individuals with high financial outgoings and little planning can face serious money worries created during semi-regular periods of unemployment. Thus, the industry's low job security, and potentially workers' relationship to money, was interpreted as influencing their mental health. As explored in more detail in Section 4.3, poor mental health can reduce access to re-employment success by reducing their access to re-employment via reduced agency.

4.3 Individual factors impacting the exercise of agency in the search for re-employment

This section presents analysis relevant to Research Question 2, identifying the factors that enable individuals to exercise agency in their search for re-employment after job loss from UK oil and gas.

The 24 individuals with experience of seeking work after job loss from UK oil and gas – either currently or previously - were the main source of data analysed to understand the factors enabling the exercise of agency in the search for re-employment. At the time of interview, 12 out of 24 participants had already found replacement work that they considered as successful re-employment. This included

re-employment in similar roles in oil and gas; and roles in other industries where their existing skillsets could be used (e.g. sub-sea telecoms). Only one participant had successfully changed to work in renewable energy. Participants reported a range of working arrangements after finding re-employment: including permanent and temporary employment agreements, and contract work. All forms of working arrangement were defined as re-employment success by the researcher if they were defined as such by the participant. The remaining 12 participants were still seeking work at the time of interview, and did not feel that they had achieved re-employment success. Several of these participants were simultaneously seeking temporary underemployment – for example, supermarket or bar work – to make some money in the meantime. No participants were currently participating in underemployment, though several were seeking it or had taken it in the past.

Therefore, participants' experiences of job loss; their intended plans for replacement work; and the process and success of re-employment varied widely. Indeed, findings were consistent with literature suggesting that individual differences play a key role in someone's experience of coping with job loss and in the search for re-employment (Lazarus & Folkman, 1984; Leana & Feldman, 1992). However, all participants had led careers in UK oil and gas; and had experience of job loss from the industry, and the subsequent search for re-employment. Therefore, despite individual differences, common themes arising from the 24 individual workers' experience of job loss and finding work again were identified.

During data analysis, three categories of 'agentic resource' were identified, on which the individual draws to act with agency in their search for re-employment. The first theme analyses health resources, which play a foundational role in the search for re-employment. In particular, there is a need to manage a mental health 'spiral' triggered for many by the stress of job loss and unemployment. This was interpreted as being so important to the re-employment process that the search for re-employment was analysed as containing a second, hidden goal of managing the spiral (in addition to the explicit goal of finding work).

The second and third themes explore the 'coping' and 'job search' resources that respectively support the individual to navigate the challenges of unemployment, and to find replacement work. Coping and job search resources comprise both psychological and practical elements. Finally, a fourth theme discusses the factors identified as influencing the exercise of agency during the search for re-employment, but which are outside of an individual's control and therefore are not portrayed as agentic resources. These factors are luck, time, and an individual's demographic characteristics.

Each overarching theme contains subthemes, presented in Table 4 below.

Table 4: Factors influencing the exercise of agency in the search for re-employment: themes and sub-themes

IV) Health resources	• Physical and mental health • The hidden goal of job loss: managing the spiral
V) Coping resources	• Psychological coping resources o Positive mindset* o Tolerance for uncertainty o Balanced locus of control o Diversified identity • Practical coping resources o Social support o Financial resources
VI) Job search resources	• Psychological job search resources o Self-efficacy* o Hope* o Resilience * o Clear goals – and adaptability **elements of Psychological capital (Luthans et al., 2004)* • Practical job search resources o Transferable human capital o Professional networks o Proactive behaviours o Individually-tailored external support
VII) Non-agentic individual factors	• Luck • Time • Demographics

Source: Researcher's interpretation of participant data

Theme IV): Health resources

Physical and mental health

Both physical and mental health were interpreted as critical for enabling displaced workers to exercise agency in their search for work. Physical health was raised by several participants in relation to their search for re-employment, who spoke about the impact of illness or injury, and the importance of everyday health behaviours. Meanwhile, mental health mentioned by almost all participants as being important for coping with job loss and unemployment, which are usually stressful and upsetting experiences. These health resources are linked: physical health was also interpreted as influencing mental health, as described by participant EE.

> *'try to keep healthy and stuff. So, you know, instead of, instead of going out, well, or staying in and drinking, you know, it was, I'll go on an exercise bike instead, or go out for a cycle or a walk or something and, you know, kind of was very aware that getting into a bad cycle of something, you know, and having a healthy, an unhealthy diet and lifestyle was the last thing that I could have done with, so I was very eager to ensure that didn't happen'* (EE, geoscientist)

Although mental health is an important resource for re-employment seekers, it is also more at risk during job loss and unemployment, as it can be triggered and weakened by shock and stress. For most participants – but not all - the shock of redundancy – provoked negative emotions, and feelings of stress and rejection, even when the job loss did not come as a shock. Redundancy was consistently described as tough, and '*a dark time*', including by those who managed to gain re-employment quickly. Several participants drew parallels with the experience of grief, and moving through stages of the grief cycle, after job loss. The first challenge for many individuals was to get over this shock, and pick themselves up to try finding work again, in hostile employment conditions. This was particularly exacerbated by the UK oil and gas industry context of low job security.

Therefore, mental health was interpreted as being endangered by the experience of job loss and unemployment, at a time when it is more important than ever. This is illustrated in these quotes from participants BB and Q.

> *'Losing my job has hit my self-esteem, and hit my ability to earn money, no end… the consequences of the downturn have been enormous for me, just lack of confidence, lack of self-esteem, hit my income'* (BB, geoscientist)

> *'I was talking to a lady, you know, from the mental health thing…. just talking through things and that really did help. Because … It's very stressful. I suppose that's the only way, because it's all in your head, you know, bills and anything could change as soon as it gets back to normal. I'll be working again. But then it drags on and on and on.'* (Q, Computer Aided Design)

Ultimately, both physical and mental health – 'health resources' - were interpreted as being critical resources to enable displaced workers to exercise agency in their search for re-employment. Health resources provide the foundation for an individual to act with agency, and exert influence on their context to access re-employment success. They were also interpreted as being foundational to the 'coping' and 'job search' resources also identified as important agentic resources, which will be analysed in subsequent themes.

The hidden goal of job loss: managing the 'spiral'

Mental health is not static: there can be a spiral effect in the mental health of someone who has suffered job loss and is seeking re-employment. Several participants explicitly used metaphors of the '*spiral*' and '*going round in circles*'. Therefore, data were interpreted to suggest that process of seeking re-employment after job loss is not just about finding a job. The job seeker has another, hidden, goal during unemployment: managing the mental health 'spiral'. This was interpreted as supporting the worker to achieve the more explicit goal of finding re-employment. The following

quote from industry stakeholder K articulates the existence of the two goals of unemployment, as both managing the psychological impact and engaging with the job hunt.

> *'I think one of the biggest challenges are the kind of psychological and emotional impact of having been through that process… there's that on the one hand, and then there's the job market…but I, I think the former, is the is, is more challenging for people, the job market, and the opportunities that are available or can be sought out, are a bit more black and white, a bit more factual… the individual's ability to engage with that practical activity, however, is impacted by the psychological effect of the other part.'* (K, HR Management)

Participants described mainly negative mental health spirals. A negative spiral can be triggered by stressors during job loss or unemployment: for example, financial stress, or frustration at lack of success in the job hunt. The spiral is circular, and gains momentum as it progresses downwards. A downward or negative spiral gains momentum over prolonged periods of unemployment and stress.

> *'Like I said, I could spiral down - if I didn't have the two wains that are a necessity to do… And it's just to keep moving forward like that, it's the only thing you can do. Because otherwise you could, I could spiral into depression easily.'* (T, project accountant)

It is important to manage negative spirals, and to stay at a more positive, constant end of the spiral. Small steps like staying active and getting out of the house every day can help an individual to manage the spiral. However, small steps alone help an individual to stay at an equilibrium, rather than helping to reverse an increasingly negative spiral. These quotes from participants A and Q illustrate the importance of taking small steps to manage the mental health spiral, while also recognising that they cannot solve everything.

> *'One of the key things I have to do is be active. If I'm not active, then you get negative thoughts. I call it flat. You get flat. Because basically your whole position, your whole status is gone. So you have to be careful that you don't get too negative. I do have people in message groups and social groups that keep me firmly grounded, eh, and are merciless… it's just to – stop the kind of, you can get morose, you can get flat, so you've got to remain positive.'* (A, project management/management)

> *'You can only go for so many walks. When you when you're walking around, you're still thinking, you're still thinking about it…. you just get into that, when, like what I've said to you, you know, when you - the industry is on its knees and then no other industry will let you in. You're not getting any help money wise from anybody, because your agency just dropped you. They just let you go. The company oil company doesn't really, they just got you off the books… So you're just on your own, you know, you're on your own.'* (Q, CAD)

Individual differences play a role in people's experiences of, and awareness of the mental health spiral. Some individuals who have low levels of mental health already may quickly go down a negative spiral after job loss, whereas others described maintaining a more positive mindset. Furthermore, not all individuals will be aware they are on a spiral from the moment of job loss. For example, they manage to get out of unemployment and regain work quickly (due to the job market or simply luck); or if they have good levels of mental health, they may not be aware of the need to manage the spiral at all. As participant I reflected,

> *'I think it's very much down to the individual. I mean different individuals all deal wi redundancy in different ways. Some'll probably go into a little bit o a depression, or others will be more focused on getting something else. And again, as I say, it depends on the work…. it's more depressing if you are putting in application after application and they're getting nothing out. Yeah, as I say, I think it really comes down to the individual person... And also the support mechanism they've got round about them as well.'* (I, trade union officer)

In summary, while mental health is critical to navigate the experience of job loss and unemployment, and thus to act with agency during the search for re-employment, it is also at risk during this stressful time. Therefore, managing the mental health spiral was interpreted to be a key hidden goal during this time, supporting the more explicit goal of finding replacement work. The subsequent theme, *Coping resources*, analyses the psychological and practical resources interpreted as helping an individual to manage the mental health spiral.

Theme V): Coping resources

Various 'coping' resources which were identified critical to acting with agency in the search for re-employment. Coping resources were understood to enable agency by supporting the individual to manage the mental health spiral. As explored in Theme IV), managing the mental health spiral is the hidden goal of the re-employment process. Achieving this hidden goal supports the individual to achieve the more explicit goal of finding replacement work. Therefore, maintaining mental health then equips the individual to act with agency in their search for re-employment: to exert a force on their surrounding social and economic context, and to influence access to job opportunities.

Like health resources, coping resources are dynamic and changeable, not static. They are put at risk by the experience of job loss, which can trigger sudden and significant lifestyle changes, as well as the stress of unemployment, as illustrated in this quote from participant I.

> *'I had somebody the other day, they just had to sell their house, because they'd been actually laid off. There's, it's not an unusual thing, that it'll have impacts on things like actually, their houses, their family life, their relationships, all that will be impacted' (*I, trade union officer)

Furthermore, there is a reciprocal relationship between the coping resources and mental health. While coping resources support an individual's mental health, they may also be damaged by declining mental health. For example, someone in a negative mental health spiral may experience damage to supportive relationships, and to their levels of positive thinking. Therefore, like mental health itself, the resources that are necessary to stop a negative spiral gaining momentum, can be put at risk at the very time they are needed the most. Examples of this are highlighted throughout the following analysis.

Coping resources were categorised as both psychological and practical. Below, psychological resources are presented first, before practical resources are discussed.

Psychological coping resources

Psychological resources interpreted as helping an individual to cope, to manage the mental health spiral, and therefore to act with agency in their search for re-employment were: a positive mindset; a high tolerance for uncertainty; a locus of control balanced between internal and external; and a diversified identity.

Firstly, a positive mindset was identified as a critically important psychological coping resource. The role of a positive mindset was more nuanced than just being 'optimistic', because of the complexities and challenges of unemployment. As E observed, '*I wouldn't... go as far to say optimism, I think it can be quite a dark time*'. Instead, it can be better described in this context as making an effort to retain a relatively positive mindset, in a difficult situation. The phrase 'glass half full' was commonly used by participants to describe their mindset, as demonstrated by participant F.

> *'Be optimistic about things… always seeing the glass as half full rather than half empty, always seeing the positives… you know, rather than thinking, I'm going to apply for a job, and I'm getting it. It's… more thinking that I've got chance of getting that job, you know'* (F, offshore electrician)

A positive mindset was interpreted as being particularly closely linked to the mental health spiral. A negative mindset can speed up a negative mental health spiral, which can have repercussions for relationships with friends and family, and the job hunt. Meanwhile, a positive mindset can help an individual to stay on, or to adopt, a positive mental health spiral.

Analysis suggests that it is easier to stay positive if you have practical resources to help ease the stress of unemployment; particularly money, and social support. Lack of these resources can make it hard to stay positive. Like all the coping resources, a positive mindset is not static, and can wax and wane as setbacks occur, as demonstrated in these quotes from participants C and I.

'keeping, keeping like a routine… rather than just, you know, feeling sorry for myself because I'm on furlough and I've got nothing to do and I've only got to apply for jobs. Em, having that, I think really helped me. So I can imagine if if I was just living alone, I can't imagine I would have felt as positive in doing it as I did when I was… So I certainly think that helps quite a lot in terms of mindset, definitely' (C, logistics)

'it's a significant amount of non-feedback that I'm just not used to. … that in itself is enough to chip away at anyone's positiveness and glass half full.' (W, operations)

Secondly, a high tolerance for uncertainty was identified as another important coping resource in this declining, evolving industry. For most people, there is total uncertainty about the length of time unemployment will last for, which adds to the stress of the situation. When an industry downturn is bad enough, several participants described periods of unemployment lasting months or years. Conversely, a buoyant job market for their specific role, or simply a stroke of luck, can mean re-employment is achieved quickly.

A tolerance for uncertainty is also required to cope with the lack of feedback and answers on job applications which take hours to complete, and which receive little response because of the volume of applicants during downturns. Thus, tolerance for uncertainty can help to reduce stress during a very uncertain time. Participant U reflected on the importance of a tolerance for uncertainty as a coping resource:

'in terms of, you know, how do you manage? I don't know, really, I guess you just develop a stoic kind of, I don't know… if I was honest, I don't think many people can do it… That level of uncertainty. That's, you know, it's a unique skill. Trust me. I wish I wish I didn't have to do it…. Because there's not much else choice. There isn't any other choice, you know, and don't get me wrong, I do realise the reality of it. Because I've had friends that have jumped off, off car parks because of this….' (U, geoscientist/engineer)

A high tolerance for uncertainty is also needed in the long term because of the UK oil and gas industry's future of decline and evolution, much of which is still unclear. Even for those who manage to find work following job loss today, there is a significant risk of another job loss in the future, as illustrated by participant AA's reflections on their future in oil and gas.

'it's crossed my mind, even if I get another job, how long is it going to last? Will it be another five year cycle, and I go through all this again, or, you know, is the maybe the industry's never really coming back? I think the glory days have long gone now, even if it makes a recovery it's going to be tough going… I'm in my early 40s, I want to keep doing this. If I do keep doing this, it may only last another five years, something like that. And then I'm back to

where I am now, but five years older, becoming more difficult to transition' (AA, geoscientist)

Thirdly, locus of control balanced between internal and external control was interpreted as another important psychological coping resource, helping the individual to manage their mental health spiral. On one hand, it is important to recognise and act on things that are within your control ('internal' locus of control). This was an important part of maintaining a calm and positive mindset, and maintaining the ability to act with agency. This includes small actions of self-care to distract from the stress of the job hunt, as illustrated by participant E.

'trying to keep a positive household, kind of leaning on them a little bit as well... their, their sort of innocence… something I could kind of try to tap into as well, and just kind of, you know, when I was playing with them, try to just focus on playing with them, rather than worrying about, you know, the elephant in the room' (EE, geoscientist)

On the other hand, it is also important to recognise what is outside of your control, and accept that it cannot be controlled ('external' locus of control). This theme developed as analysis also revealed the stress caused when an individual feels powerless to control their situation due to economic conditions. For example, several participants who were still in the process of seeking work described the frustration lacking any sense of control over their situation, in the macro hostile employment context of the UK oil and gas industry during a downturn. As participant B articulated,

'I feel like I have no control over my career, really. I feel, I feel completely trapped where I am now for sure.' (B, engineer)

Therefore, having a balanced locus of control also involves being realistic about what lies outside of your control. Accepting what is outside of your control is important for mental health, to avoid wasting energy trying to change things that cannot be changed. This includes acknowledge the role of fate, luck and chance in past experiences, and future opportunities. Participant X used the phrase '*engineered luck*' to describe his experience of gaining a role through networking, which captures the balance of doing what you can; but accepting the role of change and a wider context that you cannot control. This quote from participant H illustrates their mixed views about whether or not they are in control of their working life.

'ordinarily, I'd say, [I have] all the control… I'm in control of what I do, but I think given the times, that's clearly not true. Because you can, you can be, you could be the best whatever, forest or bloody delivery driver, or geologist or wherever, you could be the best in the business. But… at those times, I don't think it really came into it, you know, lots of good people losing their jobs… I guess almost like 50/50. Generally, I genuinely feel like I'm in control of what I do. But like I say… you could be applying for jobs that you're more than

capable of doing or more than, more than qualified of doing, but the situation was just so, you know, so up in the air, that there are so many external factors that actually, you probably don't have that much control' (H, geoscientist)

Finally, a diversified identity was interpreted as the fourth psychological coping resource. Individuals whose identity is very strongly connected to work were interpreted as being more likely to struggle more in coping with job loss, and to risk going down a negative mental health spiral. Therefore, in order to maintain a positive mindset, several participants described the need to not take job loss too personally, in an industry where everyone is at risk of redundancy at some point, articulated by participant X. Having a diversified identity, with interests in hobbies, friends and family outside of work, therefore buffers the impact of job loss, as described by participant B.

'It's not you personally, it's a corporate decision…. you have to realise that you're nothing more than a number, an employee number. It's nothing personal against 64731. You know, it's just, your number's up.' (X, geoscientist)

'I've learned after my second redundancy to try and distance myself from my achievements in my career a bit, being out of control of career options, I've turned my attention to other personal achievements that I can base my own success on, [like] hillwalking… It's a great way to remind myself that there's more to my achievements than just my career and it probably sets me up for an easier time should I be laid off again.' (B, engineer)

Practical coping resources

In addition to the psychological coping resources, two practical coping resources were interpreted as helping the individual to manage the mental health spiral: personal finances, and social support. Like the psychological coping resources, these help the individual to cope better with the stress of job loss and unemployment in a difficult job market, and thus to manage the mental health spiral. This enables them to act with agency in their job search.

Firstly, personal finances are a vitally important coping resource to reduce during unemployment. Financial security during unemployment was described as being critical to navigate the process of job loss and re-employment. Indeed, it is the foundation of an individual's experience of this period. As observed by participant DD:

'the thing is, the real thing is... it's really around resources, isn't it? Because if you've got financial resources and or support, then then you know,… it doesn't really matter. Like, you could take two years to find a job, you know, or maybe you don't need to, or maybe you can go off and do something that doesn't pay as much.' (DD)

For some older participants, redundancy came at a convenient time in life, with mortgages and debts paid up, and grown-up children left home. For these participants, redundancy provided the freedom to pursue less well paid opportunities, including career changes. However, for most participants, money worries were a significant stressor during unemployment. One participant gave the example of having lost his work laptop and having to spend money buying a new one to be able to apply for new jobs, at the very time when he could not afford it. Significant financial commitments including mortgages, loans and families to support increased the stress of redundancy, and increased the urgency to find new employment of any kind. As recalled by participant C,

> *'I think I immediately started looking for everything, because I may have, just to make sure my financial commitments were covered. So there wasn't, I wouldn't class myself as having like a big financial safety net there. So I thought, there just needs to be employment of some sort to be able to pay the mortgage.'* (C, logistics)

All participants discussed the need to have some financial resources, in the form of savings, support from partners or family, or redundancy packages. This was to both alleviate the stress of redundancy, and to give some breathing room so they could take their time to find a job they wanted, rather than have to take any opportunity to earn money.

Several participants also described the need to manage their savings well, during both upturns and downturns. Ideally incomings should not exceed outgoings; if they do, individuals must be in a position to cut unnecessary outgoings as soon as a job is lost. Working as an independent contractor create particularly acute need for good savings management, because of its extremely low job security and likelihood of unpaid periods between contracts. This model of working requires the worker to regularly save money for inevitable periods of being out of work. People tend to learn the hard way from previous redundancies, and can be better prepared for subsequent ones. These quotes from participants FF and Q illustrate the need to plan ahead financially in this volatile industry.

> *'we do get paid well, so you do have the opportunity to put money away'* (FF, geoscientist)

> *'You have to keep going. Just keep going. Put some money away. Cos that is the big factor… It just gets you out of that until it picks up again… this contractor that you are, you have to get into that mentality. And it's horrible. But you have to literally go by week, week by week…. you always have to plan ahead. Like, you know, put some money away, it is the key… while things are good. Put some away for that, when that - because it does come along. Be nice if it didn't. But you need that little safety pot there. Because when it stops, it just literally stops.'* (Q, CAD)

Several participants who described themselves as lacking a financial cushion raised the need to take on temporary work below their skill level – underemployment – to earn money while waiting for job opportunities more in line with their skills and interests. As participant A shared,

> *''I'm literally applying for a… I'm not desperate, but literally – for example I've applied for a temporary post in the Post Office for Christmas. I need to, I do have cash, but that will run out, and unfortunately, I've not been the most diligent, so I don't have significant reserves, that's going to see me through. So I need to find something. What I'm trying to do is find something casual enough that I don't even have to report it on my CV'* (A, project management//management)

Stress from money worries can build up over time, as the unemployment period wears on indefinitely, or as an individual's financial situation worsens. For some individuals, this can have a serious impact on mental health: money problems are often the most important stressor in triggering a negative mental health spiral.

However, for those in need of help, pride can be a barrier to seeking financial support via benefits, or asking for support from family. As described by participants F and E,

> *'I think you have to take, you've got to take the financial side out of the equation altogether. And if your overheads mean that you can't do that, then you're going to go down the pit that I went down in my first redundancy, which was, you know, divorce, bankruptcy and depression.'* (F, offshore electrician)

> *'I mean there is a bit of embarrassment - I actually signed on. And - which was hugely embarrassing. Because I never thought I'd ever have to do that'* (E, geoscientist/engineer)

Social support is the second practical coping resource, which helps to buffer the stress of job loss and unemployment. Participants described the value of support from family and friends: both for emotional support, and for having a distraction from the job hunt. Professional networks of old colleagues in this highly networked industry were also described as being a strong source of emotional support. Participants C reflected on the value of relationships with families and friends, while E described the sense of solidarity they gained from contact with oil and gas friends.

> *'having, you know, a good relationship or good relationships with em, you know, other half, friends, family having that to sort of, even to speak to, because I think I just I remember like being told that I was being made redundant, you just end up on on the phone…. So I think just having a sort of strong network of people just to, just to speak to, well, about anything really, that that can certainly be a huge help.'* (C, logistics)

'I think all my friends were made redundant at one point or another in the last three or four years… if we're working, if you see an opportunity that one of your friends might be, ping it to them and it lets them know that you're thinking of them, even though you're working… and when you're sitting on your own with no work, and you know that people are actually thinking of you - takes that little bit of pressure, that loneliness.' (E, geoscientist/engineer)

However, while relationships with family and friends are necessary to cope with the experience of redundancy, this period also puts strain on these relationships and potentially endangers the support they can offer. For example, offshore workers used to spending three weeks at home and three weeks away can struggle to adapt to being at home all the time. Strain on relationships is further exacerbated by money worries, and by the mental health spiral: as someone is dragged into a negative spiral, relationships can also suffer. This tension is demonstrated in these quotes from participants I and W.

*'people get into patterns, the people that have been offshore working for a number of years, they're into that pattern, know, whether it's a three and three rota, or they're away for two or three weeks… you are then put back in your family element… you're there a lot more than you used to be… it does create actual tension there.' (*I, trade union officer)

'you've got your financial side, you've got your mortgage side, but your your partner…. When you lose your security, they lose their security. And when you may be positive, they may not be… you've got, it's a double whammy. That has been probably the hardest part…. the pressure from internal and it's the pressure from your people that are that need you to bring in the money or need that security…. And that can take you to a very dark place and push you into a horrible one' (W, operations)

Similar to asking for financial help, it is not always easy to reach out for social support; either due to pride, or because it is hard to share the experience with others who do not fully understand.

'sometimes when I share some of my struggles or so on with friends… I get like, oh, like poor you... And... I don't know what to say… Because I don't, like if I don't have good news to share. And so if I can't share what's actually going on with me, maybe it just makes me feel like I don't want to really say anything... So I think that it's been a kind of a challenge as well, pressure of…. you kind of feel the expectation of others, like, why haven't you gotten yourself sorted out already?' (DD)

In summary, psychological and practical coping resources were interpreted as helping the job seeker to buffer the impact of stress during job loss and unemployment, and therefore to manage the mental health spiral. Managing the mental health spiral using coping resources was seen as supporting the individual to act with agency in their search for re-employment. However, like the other agentic resources, coping resources are dynamic; they can grow and reduce with time, as the stress of

unemployment sets in, and as a negative mental health spiral gains momentum. Furthermore, pride can make it hard for an individual to reach out and ask for the practical coping resources of financial or social support.

Theme VI): Job search resources

The agentic resources presented in Theme V) were interpreted as helping the individual to manage the mental health spiral, which supports them to act with agency in their search for re-employment.

In contrast, 'job search' resources were interpreted as supporting the individual in the more explicit goal of re-employment: accessing new job opportunities. Job search resources enable agency – the capacity to influence one's re-employment process by exerting a force on the surrounding context - by providing the individual with the drive to keep going in tough conditions, and with also the practical resources to access work. Job search resources also involved both psychological and practical elements, which are analysed below.

Psychological job search resources

Psychological job search resources enabling agency in the search for re-employment were interpreted as resilience, self-efficacy, hope and clear goals, combined with adaptability. Psychological job search resources were understood to enable agency by providing motivation and drive to keep going in the search for re-employment.

Psychological constructs of self-efficacy and hope were interpreted as motivating the individual to keep applying for jobs, despite challenges and setbacks. Self-efficacy, the expectation that one's actions will result in the desired impact, was interpreted as underlying agency in the job search process. Analysis revealed that expectations that one's actions would be worthwhile created more motivation to act. This was the case even during downturns, with few opportunities available; and in the uncertainty of an evolving industry. This quote from participant A demonstrates the motivational impact of self-efficacy:

> *'the way I'm going about it by approaching people rather than waiting for something to up on the Internet and a thousand people have seen the same ad. The way, I believe… that's a good influence on the situation, that I can move that forward or take an opportunity rather than waiting for something to come up through the mainstream… I do believe I can influence the outcome to secure the job*.' (A, project management/management)

However, like many of the agentic resources, self-efficacy can be eroded as time wears on, and the job search continues unsuccessfully. For example, one participant described how imposter syndrome was setting in the longer they were unemployed, and the more setbacks faced such as not being

invited for interview. This made them doubt their capacity to get jobs they previously knew they were capable of.

Similarly, hope for chances of re-employment in the future was identified as giving an important motivational boost to the job seeker. Closely linked to the coping resource of a positive mindset, hope was interpreted a distinct job search resource because of its motivational powers, as identified by Snyder, Irving and Anderson (1991*)*. As participant A reflected,

> *'I genuinely believe that I will get employed… Nothing disastrous going to happen, potentially we'll have to, for a period of time, adjust our lifestyles and things like that. But you have to remain positive. And there is employment, there is employment.'* (A, project management/management)

Thirdly, resilience was another key psychological job search resource identified during analysis. Resilience is critical for persevering through the relentless days of job applications, described as '*driving through the mud*' (C) and '*a test of endurance*' (GG). For most, this involves persevering despite few results, feedback from potential employers and regular setbacks.

Resilience was not described as an innate quality, but one that can be learned and developed with experience. For example, several people also described how their first redundancy them to build resiliency to cope better with subsequent ones. Participant L gave an example of this.

> '*It was the second time that I was made redundant in four years. And I was determined a) not to get depressed, b) not to get bankrupt for a second time. And c), basically to keep my shit together. So I think I think I think we've been fairly successful on that and pulling it all together*.' (L, geoscientist)

The oil and gas industry context is also closely linked to the resource of resilience. Many offshore workers develop resilience in tough offshore conditions, which they can draw on during unemployment. As participant P articulated,

> *'If… you work offshore, you have to be resilient…. the offshore lifestyle is far from convenient. It's very inconvenient you know, in, in the first 15 years offshore I've been home for 3 Christmases. Missed lots of birthdays, you know. But that's the nature of my job. You have to accept that and be resilient and move on. And I think that's why a lot of the guys in our industry when they are made redundant manage to deal with it reasonably well. And like I say, the guys I've been speaking to have been became delivery drivers, they've they found whatever work they could because they had to, and they were able to do… You can deal with a lot more difficult things is that.'* (P, offshore medic)

Fourthly, clear goals, combined with adaptability, were identified as important for focusing job search efforts, but also being able to adapt to the job market. It is important to have a goal of finding work again, and willpower to achieve it. For example, participant I observed*, 'it takes a degree of determination';* while JJ advised, '*be strategic in the applications that you make… don't scattergun, although you do when you're panicked.'*

However, in the hostile employment context of an industry downturn, it is important to have an open mind as to how those goals are achieved; and to adapting those goals as required. Thus, the necessity of being adaptable was raised frequently by participants. This included being open to new options; having the confidence to make a change; and being able to process and accept changes to plan. Adaptability also involves being open to both change in role, circumstance and even geography if necessary (although this was harder for participants with families).

The experience of being adaptable can be difficult. W used the analogy of climbing a mountain and having to change route to describe the experience of realising you need to change course to achieve your goal, the need to '*keep trudging and keep going… but… accept the change of direction*, *expect a pivot*'. As participant H said,

> *'that, that that flexibility, or willingness to do anything, basically… you've got to be willing to sort of take on, take on anything... anything that fits…basically give consideration to everything.'* (H, geoscientist)

Adaptability was interpreted as being closely linked to the practical job search resource of transferable human capital, which is analysed as a core practical job search resource below.

Practical job search resources

While psychological job research resources were understood to boost an individual's motivation to act, practical job search resources were interpreted as supporting the individual with access to alternative employment opportunities. This is a critical part of acting with agency: even with the right mindset, an individual still needs practical access to work opportunities to act with agency, and to exert influence on their surrounding social and economic context to find work again.

The most prevalent themes were transferable human capital and professional networks. Two other resources – proactive behaviours, and individually-tailored external support, were also identified as themes. Like health and coping resources, job search resources are dynamic, and can erode as time passes. This is highlighted at various points throughout the following analysis.

Firstly, transferable human capital was identified as a critical job search resource. Having transferable human capital enables the individual to exercise much greater agency during their job search. As explored below, some roles lack transferable human capital – particularly highly specialised

geoscientists – and these workers were understood to have significantly reduced agency during their job search.

As analysed in section 4.1, the evolving skills requirements of the energy sector mean that transferability of human capital is key for obtaining replacement work. Oil and gas work is highly skilled: all participants held formal vocational or academic qualifications. This was supplemented by years of experience in the workplace, which was described by many as more valuable for obtaining employment than formal education. However, whether an individual's human capital enables or constrains agency in the search for re-employment is largely determined by the industry's cycles of upturns and downturns, and the impact of this on the job market.

During industry upturns, with a buoyant job market, workers with relevant education and experience are relatively likely to get a job in their field, as long as it is not becoming obsolete as the industry declines. During downturns, it is a very different story. Some workers may be lucky enough to find work with their existing skillsets, even during downturns (for example, an offshore medic described their skillset being in demand during the Covid-19 downturn). But for the many workers who struggle to access re-employment with their existing skillsets - either during downturns, or due generally decreasing opportunities in this declining industry - existing human capital can lose value.

Therefore, analysis revealed that it is important to leverage identify and leverage transferable skills, in order to access opportunities in other roles or industries. As described by participants E and C.

> *'you've really got to deconstruct, forget oil and gas, deconstruct your CV, look at the core skills.*' (E, geoscientist/engineer*)*

> *'I made use of my sort of [public sector organisation] experience and applied for some jobs there. So that's, that's now where I'm working. So I'm back in an admin role with the [public sector organisation] in Aberdeen... I think that's actually helped me, since being, since being made redundant. I think if I'd only had experience strictly in the oil and gas industry, I might still be struggling now.*' (C, logistics)

Most participants described elements of their roles that are, at least in theory, relatively transferable to other industries. Workers who already have diversified experience prior to job loss are at an advantage; for example, one geoscientist leveraged previous experience in writing business development proposals to gain a new role.

However, the most highly skilled and specialist technical roles involving exploration and extraction, geoscientists and drilling engineers, were interpreted as being most disadvantaged in gaining oil and gas work during a downturn. These highly educated roles face a double bind: not only are they in low demand during downturns due to decreased exploration and extraction efforts, but were also interpreted as being the least adaptable to other roles and industries due to their specialist nature.

There is a further bind for these individuals, as the value of their human can be tied geographically to a specific place of extraction: for example, a specific area of the North Sea. One geoscientist described feeling that they had no experience at all to help them apply for jobs in other sectors after 25 years in highly technical oil and gas work. As participant HH reflected,

> *'Geologists and engineers in Aberdeen, we're always slightly jealous of like a London based accountant, because… you could just go and work for whoever…. accountancy, just picking an example, is a far more ubiquitous trade… than what we did tend to do'* (HH, geoscientist)

Upskilling and reskilling is seen as necessary by many who are seeking to adapt their human capital to access more employment opportunities. Several participants described proactively diversifying their skill sets to adapt to the changing energy sector; for example, undertaking postgraduate education in renewable and sustainable energies, and qualifications in project management and data analysis technologies. Some participants also described training courses as a boost to their confidence during a difficult period of unemployment, as well as providing human capital.

However, reskilling is not a panacea. Participants consistently highlighted that training and qualifications alone are not enough to gain re-employment; being able to demonstrate experience is often more important. So, for those who retrain entirely - for example, by undertaking postgraduate education in renewable and sustainable energies - may still lack relevant experience on their CV. Therefore, lack of experience is a significant barrier to re-employment for those pursuing reskilling, as illustrated in these quotes from participants B and KK.

> *'no amount of university or formal education will help you in that situation. It's not, it's not going to help you to be able to say, oh, well, when I studied my degree, we did some calculations on reservoir engineering. It's not going to help you. What you need to be able to say is if you put me in the workshop, I can and strip that tool down, I can rebuild it, and then I can go and run at the well site. That's what they want to hear.'* (B, engineer)

> *'they were they were looking for people in decommissioning… I actually knew the person who or one of the people who asked for contact with LinkedIn. And I got in touch with her…. I sent my CV, which, of course, doesn't have any, you know, hands on decommission experience, but has my [decommissioning] course. And, you know, the feedback was, oh, yeah, we've gone through people's CVs. And there's a shortlist of interviews. You're not on it. And I thought, yeah, because I don't have a hands-on experience.'* (KK, geoscientist)

Furthermore, not everyone sees re- or upskilling as necessary, nor is willing to engage in continuous learning. For example, one older worker described his reluctance to retrain, or obtain new qualifications, given his vast experience after a decades-long career in the industry: '*I've done enough*

and I'm not being smug or anything, just, I've got, I've done enough. So the training thing – no.' (A). T

The idea of simply 'reskilling' also fails to recognise the complexity of effectively changing career, giving up an oil and gas career and identity built up over decades. Nor is it quick or easy to adapt human capital built up over a career, as participant II articulated.

> *'it's interesting for me having been interested in into geology for since… I was 14 or 15 years old or something. That's a fairly large part of my life that you now say, right, that's done and dusted. And I've got to go find something else to do now. So it's, it does this there's a fairly fundamental change about who you are as a person'* (II, geoscientist)

Like all the agentic resources, human capital is not static. As time wears on, an individuals' education, skills and experience can erode, or become obsolete (for example, offshore health and safety certificates go out of date and must be renewed). As there is a general lack of support, they are quite alone, it is up to them to manage reskilling/upskilling, and keeping up their certificates. This can be costly in terms of time and money. According to participant U:

> '*You need to have your helicopter survival training, your firefighter training, you need an up to date medical, which goes out of date every two years…. if you've been out of work for a while… because those tickets go out of date and then… it becomes very difficult for you to get back in because you need to first spend four grand or so, three or four grand, to try and get yourself re-ticketed before you can really....* ' (U, geoscientist/engineer)

For individuals struggling to both gain work with their existing skillset, to draw on transferable skills or to gain value from reskilling, taking underemployment is a common reality. One form of underemployment involves an individual taking on oil and gas work beneath their skill set or pay level. This involves taking whatever opportunities come up in their field, even if the job does not match expectations, previous experience or salary levels. A second type of underemployment, described by several participants, involves seeking temporary or gig work, for money or to provide a distraction from unemployment. This was also interpreted as a way to boost the coping resource of a diversified identity. However, both types of underemployment can be difficult to access by tenured oil and gas workers who are seen as overqualified, or lacking relevant experience, as illustrated by participant Z. Neither was interpreted as representing 're-employment success', based on workers' narratives.

> *'I am going to try and go just to see if I can see, see, I was thinking, how do I even apply to a job in a supermarket or a job in a bar, with the CV I have, I I don't even know how to turn my CV into something that would make me or hireable in another area because I am so technical*

and so specialised. I don't know… that's, that's a bit of a problem of, it's been 15 months now. So do I need to start looking elsewhere?' (Z, geoscientist)

Secondly, in this small, highly networked industry, professional networks were described as a critically important resource to enable agency in the search for re-employment. Job opportunities in the UK oil and gas industry are often obtained accessed through social networks, via friends, old colleagues, professional contacts and LinkedIn. This is illustrated in these quotes from participants Z and A.

> *'I guess the jobs are not advertised, it's who you know, and through networks that you can find something. '* (Z, geoscientist)

> *'you'll find in the oil and gas industry and you'll find out through my career, it's all networking. Not that I'm a prolific networker, eh - I was tipped off by a friend that there was a job at a company called X…'* (A, project management/management)

However, during industry downturns, a professional network loses value. That is, when few jobs are available, a strong professional network does not help; though it can provide solidarity from the many other oil and gas workers made redundant. Also, for participants who were job-seeking at the time of interview, Covid-19 had hindered face to face networking: several participants described the loss of networking events, phoning people at their desks and meeting people socially who then proved to be useful work contacts.

Like asking for financial help, some participants described a reluctance to ask for help from professional networks, either because they feel self-conscious or they do not want to be seen to benefit from favours. Participant F reflected on this:

> *'I don't like that, the whole nepotism thing. I don't like it. But I've managed to convince myself through my friends, and my peers, as I says, well, they've worked with you, and they know what you can deliver. So don't think that they're giving you the job, you've got to offer your own merit because of your previous experience you've, you've demonstrated to them. So it's made me feel a little bit better about it...'* (F, offshore electrician)

The UK's oil and gas industry is a small world and it is important to respect and nurture social relationships, and not behave in ways that risks harming them. As X observed, '*I left on really good terms. Always close the door softly… you know, if you're let go, don't slam the door in your way out. Leave on good terms.'*

Thirdly, the search for re-employment after redundancy requires proactive job search behaviours, particularly during industry downturns. Proactive behaviours were therefore identified as a third practical job search resource. Job hunting with few opportunities are available requires a great deal of

time and effort to find opportunities, and apply for them, a process described as a '*rabbit warren*' (F). Participants described making many applications, involving a significant amount of time, energy and effort. Specific behaviours described by participants include starting to look for work immediately, as the process only gets harder as time passes; proactively reaching out to social contacts for opportunities; applying for as many jobs as possible, but in a clear and targeted way; and tailoring CVs and interview responses to each role. Furthermore, proactively keeping busy during unemployment provides things to talk about during an interview. Participants B and AA both gave examples of the importance of proactivity in the job search, and of keeping busy during unemployment.

> *'it was literally just a case of essentially the modern equivalent of cold calling them, just add them on LinkedIn and just say, look, I have this experience, I know, I've seen your careers website, you're not recruiting just now, but can you just bear in mind for the future? And normally that would be quite positively received. Generally, people would say, OK, thanks, I'll bear in mind. And just just doing that, I think just keeps people, keeps you fresh in their minds'* (B, engineer)

> *'in my mind is important, you know, even if it's not paid work, it's important to be doing something. When you…. come around to another job interview. So what you've been doing for the last year? Oh well, you know you don't want to say you've been sat on the beach for the last year just drinking coffee or wine or whatever, you know, you can say, Well, look, I tried to get this project going. I've been working with this person, you know, and it shows, it shows you've been putting time to use. I felt that was an important, important element.*' (AA, geoscientist)

Fourthly, several participants described receiving support from redundancy outplacement services, CV-writing sessions organised by outgoing employers, and the Job Centre. They further described seeking advice from recruiters and recruitment websites. However, generic resources for job seekers were generally described as unhelpful, due to a lack of understanding of the unique oil and gas industry and its highly skilled workforce. Thus, generic support for job seekers across contexts was described as not being a useful resource for displaced workers. Participant Z shared this story about the lack of help they experienced at the Job Centre, due to their lack of industry knowledge:

> *'I was on the job seeker allowance for six months…. And the lady spoke to me and she asked what I was doing, and she, she couldn't even spell it. And so she just told me, Oh, you need to register on that website and look for a job. Obviously, I had a bit of a giggle, I… said, well petro-physicist, zero. And she asked me, oh, you need to look elsewhere than Aberdeen… I said, Well, I'm actually looking at the whole planet, you know, it's, I'm not limiting myself to the UK because I know I'm gonna have to move probably. So that obviously through the*

> *official channels, then you can't get help other then a bit of finance, you can't get help finding a job basically.'* (Z, geoscientist)

Support was interpreted as only being useful when tailored to the unique context of the UK oil and gas industry. For example, a good source of industry-specific support is available from trade unions, who are able to connect workers with potential, employers, and also help individuals struggling with job loss to access benefits.

Some participants described the value of seeking individual career coaching or counselling to enable personal reflection on their own situation, rather than taking generic advice. These individually tailored interventions were described as much more useful than generic support services. Thus, external support can support displaced workers, but only if it is tailored to the individual, and if there is a good understanding the idiosyncrasies of the oil and gas industry.

> *'I did a bit of coaching as well. So I went to professional coach… because I wanted to do a little bit of me, and I wanted to look at me…. my moral compass and look at making sure that whatever I'm going to do going forwards was lined up with my beliefs.'* (W, operations)

In summary, psychological and practical job search resources were interpreted as providing the individual with motivation and access to job opportunities. This allowed them to persevere in their job hunt and therefore to act with agency, in often difficult market conditions.

Theme VII) Luck, time and demographics

In addition to the health, coping and job search resources that enable agency in the search for re-employment, as explored in Themes IV, V and VI, three other factors were identified as influencing the exercise of agency in the job search. These three factors are at the level of the individual, but are out of their control, and therefore were not classed as agentic factors. These factors are luck, time and demographics. Even if an individual has high levels of health, coping and job search resources, the impact of luck, time and their demographic characteristics could enhance or constrain their exercise of agency, as explored below.

Luck

Regardless of the behaviours an individual engages in, and the health, psychological and practical resources they have at their disposal, luck can still play a significant role in gaining work after job loss. A stroke of luck can put a sudden end to unemployment when the right opportunity comes up at the right time. Particularly during industry downturns, when few job opportunities are available, a stroke of luck can make the difference between continued unemployment and re-employment. Participant B articulated the role of luck in the following quote.

> *'The way these things are in this industry, it's just, you need to be in the right place at the right time, and that's exactly what happened to me. I don't think there were many people being hired around that time. I just happened to be there. I don't really think I did anything unusual. I just think, like I say, that the company I work for now were desperate. They needed someone to go the next day.'* (B, engineer)

Time

Many of the study's participants were out of work for months, or even years. The agentic resources required to manage the spiral, and gain re-employment, are not static. Time was interpreted as mainly eroding the agentic resources (although one participant did describe the passing of time as giving them the opportunity to clarify their longer-term career goals). For example, self-efficacy can erode as job applications do not come to fruition and the job searcher starts to doubt their abilities. Meanwhile, positivity can wear thin as the job hunt wears on with no success, and little feedback or acknowledgement from potential employers. In terms of practical resources, time can also erode human capital, as qualifications and certificates expire and need to be replaced at significant cost to the individual, and expertise may start to become out of date.

Time is also closely related to the spiral. As time wears on, it can be hard work staying on a positive spiral, and a negative one could gain momentum. As time wears on, therefore, achieving the two goals of managing the mental health spiral, and achieving re-employment, become harder to reach. As Participant I, a trade union officer, summarised:

> *'the longer you're unemployed, the harder it is to get back into work… If they can get a job quickly, I think that's better. If it takes longer, the longer it takes to get the job, then the harder it actually gets. Because… the qualification element of that running out. But then their routine changes. Their routine that they've had for being offshore is one thing. After six months of being, of being at home all the time, it's more difficult to get back into that routine as well…. if there's the work there, then trying to get them back into work as quickly as possible*' (I, trade union officer)

Demographics

As described in the theme of 'Industry culture', the oil and gas industry is dominated by workers who are '*male, White, of a certain age*' (CC). However, analysis of individual narratives revealed that the influence of demographic characteristics is likely more complex than the predominantly '*pale, male and stale*' workforce implies.

Despite recent efforts to create a more diverse workforce, the heterogeneity of the oil and gas industry was seen as a potential barrier to re-employment by some workers; particularly age and ethnicity. Regarding age, several older participants perceived their age as a potentially hindering factor in their

search for employment. This was raised by mostly participants in their 50s and 60s (although one worker in his 30s described his concern that he would be seen as inexperienced compared to older workers). Several of these participants shared their concern that they would be overlooked in favour of younger workers with a longer career ahead of them for oil and gas positions; or that they would be perceived as struggling to transition to new roles in renewable energies because of the steep learning curve. Participant A shared their views on how their age would be perceived.

> *'It is [an] employers market.… and if I was the person sitting at the desk… that role that they've advertised is for career progression, development… you can't take a 57 year old that, potentially, is going to leave at 60, as a get-out…. I can see… the perspective of an employer… I remember - I used to sit at my desk and I'd get 20 CVs for a job and I'd go through them… I would - and this is, it's shameful but it's true, because it's just the way – I'd look at that age, it's like you don't see their age on it, but you can tell. And I'd say, nah, I'm only a young guy. I don't want somebody of a certain age being in – which... I'm now the person applying for jobs, and I think that's a significant factor, that may be a challenge for me finding work. '* (A, project management/management)

Nationality and ethnicity was perceived by two participants as an influence on their job search process. One participant described fearing that, as European, they were at greater risk of redundancy than their British colleagues after Brexit. Meanwhile, DD, the study's only Black participant, reflected,

> *'I feel like there are a lot of factors that are hindering or hindering me. You know, I'm [Black]… it played a role throughout my whole career. And it plays a role in what my CV looks like. So, it definitely plays a role in my, in my job search, consciously and unconsciously' (DD)*

Gender did not arise as a potential barrier to re-employment, despite the male-dominated nature of the industry: only two women were interviewed, neither of whom described feeling at a disadvantage in their search for work compared to men.

4.4 Response to Research Question 2

Section 4.3 presented detailed findings in response to the study's second research question: what factors enable individuals to exercise agency in their search for re-employment after job loss from UK oil and gas? This section synthesises these findings to provide a direct response to Research Question 1. According to the morphogenetic approach (Archer, 1982; 1995) to structure and agency adopted in this study, structure

and agency are analytically distinct; and structure can be analysed as preceding agency[12]. Thus, the structural features of the oil and gas industry identified through Research Question 1 were interpreted as directly influencing the exercise of agency, as explored in Research Question 2. In particular, the UK oil and gas industry's cyclical nature and resulting low job security; its status of decline, evolution and uncertainty; and specific features of its unique culture were all understood to influence the role of the agentic resources, and other factors, identified as influencing workers' exercise of agency after job loss.

Three categories of 'agentic' resources were identified as enabling the individual to act with agency in their search for re-employment. The three categories of agentic resource - health, coping and job search - as summarised in Table 5. Coping and job search resources both integrate psychological and practical elements.

Table 5: Health, coping and job search resources enabling agency

	Coping resources	Job search resources
Health	• Physical health • Mental health	
Psychological	• Tolerance for uncertainty • Internal locus of control • Positive mindset • Diversified identity	• Resilience • Self-efficacy • Hope • Clear goals • Adaptability
Practical	• Personal finances • Social support	• Transferable human capital • Professional networks • Proactive job search behaviours • Individually-tailored external support

Source: Researcher's interpretation of participant data

Firstly, physical and mental health – 'health resources' - were interpreted as being critical resources to enable displaced workers to exercise agency in their search for re-employment. Health resources provide the foundation for an individual to act with agency in their search for re-employment. They were also interpreted as being foundational to the 'coping' and 'job search' resources that were also identified as supporting the exercise of agency.

Physical and mental health are dynamic, not static. In particular, analysis revealed the existence of a mental health 'spiral' which can be triggered by the stress of job loss and unemployment. Managing this mental health spiral, in order to maintain good mental health. was interpreted as being so important to the job hunt that it was conceptualized in analysis as the hidden goal of job loss. Achieving this hidden goal is proposed as being necessary to achieve the more explicit goal of finding replacement work.

[12] The morphogenetic approach also holds that agency can then influence structure: i.e. that individual workers' agency may then influence the structural features of the industry. However, this is out of scope of the study's research objectives.

Notably, individual differences were interpreted as an important influence on everyone's experience of the spiral. Not all individuals will be aware they are on a spiral from the moment of job loss. For example, they manage to get out of unemployment and regain work quickly thanks to a buoyant job market or luck; or if they have good levels of mental health and have a well-balanced spiral, they may not be aware of being on a spiral at all. However, the researcher's interpretation was that everyone has a spiral to manage, whether they are conscious of it or not.

Therefore, acting with agency in the search for re-employment involves two goals: managing the mental health spiral, and accessing alternative employment opportunities. To achieve these goals respectively, two further types of agentic resource were identified: 'coping' and 'job search' resources. Both coping and job search resources involve both psychological and practical elements.

Coping resources support the exercise of agency in the job search by helping the individual to reduce the stress of job loss and unemployment, and to manage their mental health spiral. Psychological coping resources were identified as a positive mindset, tolerance for uncertainty, a balanced locus of control and a diversified identity are presented first. Practical coping resources were identified as personal finances, and social support. Individuals with high levels of these resources may find it relatively easy to manage the spiral, and indeed may not be aware of having a mental health spiral to manage at all. Individuals with lower levels of these resources may struggle more to manage the mental health spiral.

Job search resources support the exercise of agency in the job search by equipping the individual with drive and motivation to keep going in a difficult employment environment; and with the practical resources they need to access job opportunities. Therefore, job search resources were interpreted as supporting the individual to access alternative employment. Psychological resources of resilience, self-efficacy, hope and clear goals combined with adaptability were interpreted as boosting motivation and efficacy for the job search. Practical resources of human capital, professional networks, proactive behaviours and tailored external support were interpreted as supporting the individual in their practical job search.

However, a simple list of agentic resources (health, coping and job search) is not sufficient to let the individual achieve re-employment success. Non-agentic factors of luck, time and demographics were all interpreted as influencing the exercise of agency. These three factors are at the level of the individual are at the level of the individual, but are out of their control, and therefore are identified as non-agentic factors.

Firstly, luck played a key role several participants' narratives of finding re-employment success. A stroke of luck can put a sudden end to unemployment when the right opportunity comes up at the right time. Secondly, time has a strong influence. As the agentic resources are dynamic, not static, time can erode them; even when an individual had high levels of health, coping or job search resources to start

with. Time can also exacerbate negative mental health spirals, which may gain momentum over time. Thirdly, an individual's demographic characteristics were also perceived as enhancing or constraining agency. Primarily, individuals described worries that older age, and being of non-British nationality or an ethnic minority would be perceived as a negative factor by employers. These perceptions based on their previous experiences within the UK's oil and gas industry. However, despite the male dominance of the industry, the two women interviewed did not described perceiving their gender as a potential constraint to their chances of re-employment success.

In summary, acting with agency in the search for re-employment after job loss from oil and gas was interpreted as involving agentic health, coping and job search resources; and also being influenced by other factors out of an individual's control (luck, time and demographics). These factors are combined into an explanatory model, presented in section 4.5.

Individuals with higher levels of agentic resources (health, job search and coping resources) may be more likely to achieve the two goals of managing their mental health during a challenging time and achieving re-employment success. These resources were interpreted as enabling them to act with agency. Conversely, those lacking in job search and coping resources, for example, those with lower financial reserves, lacking in social support, or with poor mental health, may struggle to achieve the two goals and may therefore struggle to exercise agency in their search for work after job loss.

4.5 Model: Agency in the search for re-employment after job loss from UK oil and gas

Aiming to capture the complexity and dynamics of acting with agency to obtain re-employment after job loss from the UK's unique oil and gas industry, an explanatory model based was created based on the study's findings. The model, presented in Figure 4, draws on the mountain-climbing analogy used by Participant W, who described the need to keep pushing upwards to reach the peak, and change course as challenges arise.

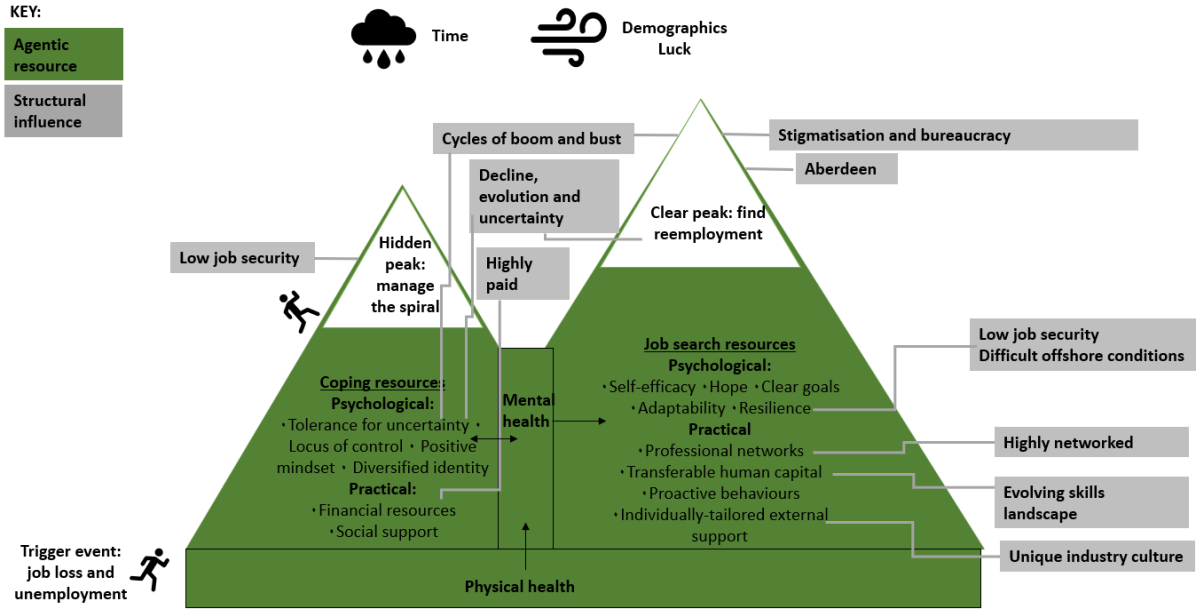
The model comprises two mountain peaks. The main peak represents achieving re-employment, which is the explicit goal for any job seeker. However, in order to get there, the individual must first climb a hidden peak of managing the mental health 'spiral', which is necessitated by the stress of job loss and unemployment. To act with agency in their search for re-employment, an individual must climb both peaks.

In order to climb these mountains, agentic resources of health, coping and job search resources are required. Structural features of the UK's oil and gas industry also influence the exercise of agency in this context, and are highlighted in grey. Time, luck and demographic characteristics, portrayed as weather, also help or hinder the individual's journey up the mountains. Therefore, as explored below, climbing both mountains, and acting with agency, may be easier for some individuals than for others.

A potential weakness of the model is that it implies linearity whereas in reality managing the spiral is a dynamic process. Particularly for individuals with low levels of mental health or coping resources, the goal of managing the mental health spiral may keep recurring throughout their search for re-employment. This limitation was judged to be acceptable in order to convey the complexity of concepts and resources required in this challenging context to achieve re-employment, while presenting the model in a useable way.

This section presents the explanatory model in more detail. It is discussed in relation to relevant literature in Chapter 5.

Figure 4 Explanatory model: Agency after job loss from UK oil and gas



Source: Researcher's interpretation of participant data

Agentic resources and other factors

Agentic resources required to climb both mountains are highlighted as health, coping and job search resources.

Physical and mental health resources are central to 'climbing' both mountains, or achieving both goals: finding re-employment, and managing the spiral. The model presents physical health as the foundation of the mountain range, on which all other resources and goals can build. Mental health is presented the core of the mountain range, impacting both the goals of managing the spiral and finding work; and all the coping and job search resources required to achieve these goals. Thus, the model portrays physical and mental health as being key resources to achieve the goals of both managing the

spiral, and finding re-employment; and also to developing the practical and psychological resources required to achieve those goals.

In order to climb the first mountain, and to manage the mental health spiral triggered for many by job loss, and the stress of unemployment, the individual requires various coping resources. These comprise various psychological and practical elements. Psychological coping resources are identified as a positive mindset; a tolerance for uncertainty in this changing and ultimately declining industry; a balanced locus of control; and a diversified identity to reduce the impact of job loss. Practical resources which help to reduce the stress of unemployment are identified as social support from friends and family, and financial resources to reduce money worries.

Notably, the relationship between mental health and coping resources is presented as reciprocal. While the coping resources are important to help the individual boost their mental health, declining mental health may also reduce the coping resources; for example, by putting additional strain on social support from family and friends.

It is important to re-emphasise the role of individual differences in the goal of managing the spiral. Each individual will have a different experience, based on their personal psychology, experiences and their other life circumstances. If an individual has relatively high levels of the resources which can promote a positive spiral (for example, a positive mindset good physical health, strong social support); or if they obtain re-employment quickly before a spiral has time to develop; then they may not notice the spiral, and it may appear that that there is little need to manage the spiral proactively. Meanwhile, other individuals, with limited levels of the health, psychological and practical resources required to create a positive spiral, or to maintain a stable one, may be much more likely to notice the impact of the spiral, and the need for conscious efforts to manage it.

The second peak represents the explicit goal of finding re-employment after job loss. According to the model, this peak can only be climbed once an individual is managing the spiral. Again, in order to act with agency in achieving this goal, psychological and practical job search resources are needed. Psychological resources of resilience, self-efficacy, hope, clear goals and adaptability were interpreted as helping an individual climb this mountain. Practical resources supporting this goal were interpreted as transferable human capital, professional networks, proactive behaviours and individually-tailored external support (such as coaching or counselling).

The influence of structural features of the UK oil and gas industry

As explored in sections 4.1 and 4.2, the UK oil and gas industry is a unique context. Several structural features were interpreted as influencing the exercise of agency and access to re-employment, as displayed in grey boxes in Figure 4.

The industry's cyclical nature, and the importance of Aberdeen to industry activity, were interpreted as impacting an individual's access to re-employment in oil and gas. Meanwhile, the current status of decline, evolution and uncertainty was understood to impact workers' access to jobs in clean energy production, particularly renewable energy. This involves delays to job creation in renewables; lack of clarity over the number and nature of jobs that will be available in the future, and the skills required to do them; and lack of support to help workers transition to other areas. Stigmatisation of oil and gas workers, and unnecessary bureaucracy regarding certification for offshore installations, was also interpreted as reducing workers' access to jobs in renewables.

Notably, the industry context was interpreted was interpreted as having a greater influence on the explicit goal of finding replacement work in this unique, cyclical and declining industry. The experience of the hidden goal, managing the mental health spiral, was seen by the researcher as being more universal to job seekers across different contexts. However, the industry's endemic low job security was understood to exacerbate the need to manage the mental health spiral.

As well as influencing both goals, the industry context was interpreted as influencing the agentic coping and job search resources required to achieve them. Regarding coping resources, a high tolerance for uncertainty is required for workers in the UK's oil and gas industry, which is characterised by cycles of boom and bust and corresponding low job security; and a future of decline and evolution, which is still uncertain in many regards. Meanwhile, the highly paid nature of the UK oil and gas industry is closely linked to the practical resource of financial resources: which can both give individual the chance to save money to draw on during almost inevitable periods of unemployment in this cyclical industry, or because it enables high financial outgoings that become a stressor after job loss.

Regarding job search resources, the industry's low job security, and tough offshore conditions, can help build the resilience necessary to cope with extended and repeated periods of job loss. However, the pride, challenge and identity given by the work can make it difficult to adapt to work in other roles and industries In relation to practical job search resources, leveraging professional networks to access job opportunities is critical in this small and highly-networked industry. The energy sector's evolving skills landscape makes transferable human capital critical, although this is harder for individuals in highly specialist, technical roles. Finally, the unique industry culture renders generic job-seeker advice and services unhelpful; therefore, it is important that support, coaching or counselling is tailored to the individual, and to the context of UK oil and gas.

Weather conditions: time, luck and demographics

Time, luck and demographic characteristics are presented as weather, influencing an individual's journey up both mountains. Time is presented as rain: as time wears on, and the job search continues,

time, like heavy rain, may erode the psychological, practical and health resources that help the individual to climb both mountains. Demographics - specifically, age and ethnicity - and luck are presented as wind: depending on the direction, they may help or hinder your journey up the mountains.

4.6 Concluding summary

This chapter has presented the results of the researcher's analysis of the 24 interviews conducted with individual workers; and 13 interviews conducted with industry stakeholders. Results were presented based on the study's two research questions: identifying the structural features of the UK oil and gas industry influencing workers' search for re-employment; and analysing what factors enable the exercise of agency in this context.

Section 4.1 presented analysis relevant to the first research question, seeking to identify the structural factors that influence access to re-employment success. Three themes were analysed: the industry's boom and bust nature; its future of decline, evolution and uncertainty; and the unique industry culture. Section 4.2 summarised these detailed findings to respond directly to Research Question 1. The industry's boom and bust nature; its status of decline, evolution and uncertainty; and various features of its culture were interpreted as largely reducing access to re-employment success via reduced job opportunities, and making it harder for oil and gas workers to access the opportunities that exist in other industries including renewable energy. Its low job security, and money worries created during industry downturns and periods of unemployment, were further interpreted as reducing access to re-employment via its toll on mental health.

Section 4.3 presented analysis relevant to the second research question: identifying the resources and factors that enable the exercise of agency in this context, for individuals seeking work after job loss. Section 4.4 summarised these detailed findings to respond directly to Research Question 2. Good physical and mental health resources are critical to acting with agency in a difficult employment context, and dealing with the stress of unemployment. As mental health is at risk for many after job loss and during unemployment, a hidden goal was revealed: managing the mental health spiral. Indeed, agency in this context was interpreted as involving the pursuit of two goals: firstly, the explicit goal of finding replacement work; and secondly, less explicitly, managing the mental health spiral. Both goals are important elements of agency for oil and gas workers seeking re-employment. Further agentic resources of job search and coping resources, both comprising psychological and practical elements, were interpreted as supporting the individual to reach the goals of managing the mental health spiral and accessing re-employment respectively.

However, acting with agency after job loss from UK oil and gas is not as simple as obtaining a list of resources. This challenging experience is dynamic; and the agentic resources are not static. Thus, the

experience is influenced by time, which can erode all the agentic resources the longer unemployment lasts; luck, which can potentially end unemployment suddenly when the right opportunity comes at the right time. An individual's demographic characteristics is also presented as influencing access to work: specifically age and ethnicity, as older participants, and several participants from ethnic minorities and non-British nationality, described perceiving themselves as being at disadvantage because of their demographic characteristics when applying to jobs.

In Section 4.5, findings were amalgamated into an explanatory model, proposing what it takes to act with agency when seeking re-employment in the context of the UK's declining oil and gas industry. The two goals of managing the spiral, and obtaining re-employment, were presented as mountains to be climbed, based on a mountain-climbing analogy used by a participant to describe their experience of seeking work.

In the following chapter, these findings will be interpreted in relation to relevant literature.

Chapter 5: Discussion

The results of the study were presented in Chapter 4, which was organised according to the study's two research questions. Structural features of the industry were interpreted as influencing (largely impeding) access to re-employment success via reduced access to alternative employment, in both oil and gas and other industries. Meanwhile, the industry's endemic low job security, and money worries created during industry downturns and periods of unemployment, were interpreted as reducing access to re-employment via a potential toll on mental health.

In order to act with agency in the search for re-employment in this context, three categories of 'agentic' resource were identified. These were health resources (physical and mental health); coping resources, and job search resources (both comprising psychological and practical elements). In particular, mental health was identified as being so important to acting with agency during unemployment that managing the 'mental health spiral' was identified as the hidden goal of the job search process, enabling the more explicit goal of finding alternative employment. Other factors, out of an individual's control – luck, time and demographics – were also interpreted as playing a role in the re-employment process. Findings were synthesised into an explanatory model at the end of Chapter 4.

The chapter interprets the study's findings in relation to previous literature. Firstly, the structural factors influencing access to alternative employment opportunities after job loss from UK oil and gas are discussed. This is followed by a discussion of the industry's low job security, and the quality of work available both before and after job loss. The discussion then turns towards the explanatory model capturing what it takes to act with agency in the search for re-employment after job loss from UK oil and gas; and the individual-level resources and factors that may enable an individual to do so. Finally, the overarching research aim of exploring the reality of a *Just Transition* for UK oil and gas workers is addressed.

This study follows the precedent of a growing field of empirical studies analysing interview data from fossil fuel workers about their experiences of a *Just Transition* (e.g. Olson-Hazboun, 2018; Graff et al., 2018; Banerjee & Schuitema, 2022; Cha et al., 2022; MacNeil & Beauman, 2022; Sicotte et al., 2022; Carley et al., 2018; Roden, 2021). However, it is the first study to collect and analyse data from UK oil and gas workers.

5.1 Access to alternative employment

In Chapter 4, structural features of the UK's oil and gas industry were primarily interpreted as impacting workers' access to alternative employment opportunities within and beyond oil and gas. Four issues are discussed in relation to previous literature: the industry's cyclical nature; delays to job creation in renewable energies; evolving skills requirements; and further barriers to employment in

renewable energies. Recommendations for *Just Transition* interventions to support oil and gas workers in tackling the barriers to re-employment discussed throughout this section proposed in Section 5.4.

Cyclicality

Most participants emphasised that the UK's upstream oil and gas industry is highly cyclical. This has direct implications for industry activity and employment. Thus, the cyclical job market was identified as exerting a strong influence on access to re-employment success. During industry upturns, a worker can exercise agency relatively easily thanks to a buoyant job market and good job opportunities. (Notably, however, job loss is still a personally challenging event, even when prospects for re-employment are good). During downturns, the situation is different. It is difficult to act with agency in a poor job market with few opportunities available, and in this hostile employment context, workers are rendered effectively powerless in their search for re-employment. Concurrently with data collection, the Covid-19 downturn of 2020 provided an extreme example of the struggles to obtain work during an industry downturn. In this volatile employment context, a lot is asked of workers who lose their jobs, particularly during industry downturns. An individual who has lost their job must draw on a range of personal resources – health, coping and job search resources – to act with agency in the search for re-employment in this context. An individual with lower levels of agentic resources may therefore struggle to thrive in a cyclical economy.

The cyclical nature of the UK oil and gas industry, and its impact on workers, is not a new finding. Various researchers have observed that that economic context has a strong influence on job availability for displaced workers (Duffy et al., 2016; Wanberg et al., 2002; Jolkkonen et al., 2017), including in the UK's oil and gas industry specifically (OGUK, 2020). The boom and bust nature of oil and gas has been widely acknowledged in previous academic and UK Government research (BEIS, 2019; Baffes et al., 2015). Findings are also congruent with studies documenting the challenges of being dependent on a cyclical economy (e.g. Mahdiani et al., 2021). However, this study is unique in providing qualitative data from UK oil and gas workers about their experiences of this cyclicality; and its impact on their search for replacement work after job loss from this declining extractive industry.

This boom and bust pattern is particularly acute in Aberdeen, where the prevalence of oil and gas employment means that jobs are plentiful during upturn; but that workers are less agile during downturns, with fewer alternatives available locally. This evokes literature highlighting that the impact of the energy transition will differ by geography, and the risk to specific regions and cities should be assessed individually (Sharma & Banerjee, 2021; Carley & Konisky, 2020; Carley et al., 2018; While & Eadson, 2021). However, this is the first academic study to highlight this phenomenon in Aberdeen for the UK oil and gas industry.

Finally, the impact of boom and bust cycles on access to work evokes work emphasising that the timing of energy transition efforts will be important to leverage existing human capital in oil and gas (Jagger et al., 2013: Fankaeser et al., 2008). This important topic is discussed later in this section.

Delays to job creation in renewable energies

Government and industry publications on the UK's evolving energy sector have documented plans to create enough new jobs in energy to offset lost fossil fuel jobs as oil and gas declines (BEIS & OGUK 2021; RGU ETI, 2021). These forecasts are supported by academic analysis of job creation potential in the UK's growing renewable energy sector (Allan, Connolly et al., 2021; Allan et al., 2020; Allan et al., 2014) and global analysis on the potential of renewable energies to replace fossil employment (García-García et al., 2020; Dominish et al., 2019; Pai et al., 2021; Garret-Peltier, 2017).

However, the study's findings revealed a lack of significant levels of job creation in renewable energies in the UK so far. This reflects ONS (2022) data, which documents stable employment in low carbon and renewable energy economies between 2015 and 2020. Indeed, according to industry stakeholders interviewed, significant levels of job creation in renewable energies are not expected for some years: according to one skills specialist, significant levels of job creation will not be evident for approximately five to ten years. Therefore**,** delays to significant levels of job creation were identified as a significant barrier to finding alternative employment in renewable energies. Esteban et al.'s (2011) observation that the decline of oil and gas employment needs to dovetail with job creation in renewable energies seems highly relevant in the current context of the UK energy sector.

Furthermore, the combination of the UK's cyclical nature with delays to job creation in renewable energy highlights that the transition of oil and gas workers to low-carbon energy employment may not be linear. Boom and bust cycles in oil and gas represent an opportunity to transition the oil and gas workforce to employment in clean energy. During industry downturns, a surplus of energy workers is available on the job market who could move to lower-carbon energy work if it is available, and if the possess appropriate skills. Therefore, research on the net employment impact of the energy transition (BEIS & OGUK 2021; RGU ETI, 2021; García-García et al., 2020; Dominish et al., 2019; Pai et al., 2021; Garrett-Peltier, 2017) would benefit from more explicit consideration of the cyclicality of oil and gas.

Evolving skills requirements

The energy sector's evolving human capital requirements were also interpreted as influencing access to re-employment in the energy sector[13]. Skills requirements are evolving as companies diversify into renewable and clean energy production, alongside oil and gas work.

In this environment, transferable skills are critical for workers to remain employable. Most participants agreed that there is a great deal of synergy between the skills needed for oil and gas and clean energy production; and described having at least some level of skills that were transferable to other roles and industries. This evokes academic and industry literature emphasising that oil and gas workers possess largely transferable skills, and should be well-positioned to supply human capital to the evolving energy sector (RGU ETI, 2021; OPITO, 2018, 2019; Memon & Rashdi, 2008; Combe, 2014; Leitch et al., 2019; Chen et al., 2020).

There is also a need for oil and gas workers to adapt to the evolving energy sector. Academic and industry literature contains a discourse of the need for oil and gas workers to upskill and reskill as the energy sector evolves. Upskilling has been defined as a '*refresh, revisit or development of skills through continuous learning*' (CBI, 2020, p9). More radically, reskilling, or retraining, has been defined as '*the process of learning a new vocation of skillset, so that an individual can adapt to new responsibilities, a new role of a new job of career altogether*' (CBI, 2020, p9). Much literature highlights that individuals must be flexible and adaptable in responding to the energy sector's dynamic job market (OPITO, 2019; Georgiou et al., 2021; McQuaid & Bergmann, 2016), and that upskilling and reskilling will likely be necessary for many workers (RGU ETI, 2021; OPITO, 2018, 2019).

However, this study's findings highlight five challenges to narratives of skills transferability, reskilling and upskilling. Firstly, not all workers possess an equal level of transferable skills. The most highly specialised and educated workers interviewed in this study – geoscientists focused on a specific area of the North Sea - described themselves as having limited experience that is transferable to other roles and industries. One participant described how their specialist skillset even precluded access to temporary underemployment, for example in bar work. Therefore, workers whose skillset is highly specialised need more support to adapt their skillset to the evolving energy sector.

[13] The issue of human capital changes caused by increasing levels of automation was raised by Group 2 participants, industry stakeholders. This evokes various industry and academic papers highlighting the future importance of automation in determining job availability and skills requirements (OPITO, 2019; Arcelay et al., 2021; Skills Development Scotland, 2019; Alibasic et al., 2022; Georgiou et al., 2021). However, in this study, automation was not raised by workers as a predominant issue in adapting their human capital to the job market. Therefore, this discussion focuses instead on the skill transferability required by lower-carbon energy production, including renewable energies, decommissioning and carbon capture and storage.

Secondly, reskilling through education is not a panacea. Results highlight that it is practical work experience, not education, which helps an individual to find employment. Therefore, education in renewable or low-carbon energies should comprise an element of practical work experience as far as possible in order to boost students' employability. The individuals interviewed for this study described this as being missing from reskilling programmes.

Thirdly, the industry's focus on the need for oil and gas workers to reskill neglects the individual experience of giving up on a career built over decades. Several participants spoke about the difficulty of leaving their oil and gas identity and achievements behind as they sought to start again in a new career in renewable energy. This draws on literature on the complexities of a significant career change, which suggests that leaving behind a deeply ingrained work identity can be a complex and challenging experience (Ebaugh, 1988; Hoyer & Stayaert, 2015). Such challenges should be acknowledged in industry narratives about reskilling.

Fourthly, it is not yet clear what roles will be available in the future; and therefore, what skills workers will require. This lack of clarity was interpreted as reducing workers' access to quality re-employment in the short term, as they are unable to seek opportunities that will set them on a sustainable career path. In the longer term, this lack of clarity was interpreted as reducing their agency in planning reskilling efforts and career changes. Analysis by the Energy Transition Institute at Robert Gordons' University identifies future job volumes in the UK offshore energy sector by '*job family*' (RGU ETI, 2021, p2). For example, significant volumes of jobs are expected to be available in the future in operations, technical work and engineering (RGU ETI, 2021). Given that this analysis was published contemporaneously with data collection for the study, the lack of clarity over future job availability may be due to a lack of awareness and communication; or lack of commitment to future job availability by employers. Ultimately, more clarity over future skills requirements is needed.

Finally, findings suggest that more industry support could be given to oil and gas workers to help them reskill and upskill; particularly those who are self-employed, or unemployed, and are not benefiting from the support of an employer. Industry stakeholder participants agreed that oil and gas expertise must be harnessed to support growing renewable energy industries in the North Sea, echoing industry rhetoric on its need to retain the expertise of North Sea oil and gas workers as the energy sector evolves (OPITO, 2019). However, most individual workers described being responsible for their own reskilling, at their own cost and effort. For example, several participants had independently undertaken a master's qualification in topics related to low-carbon energy production and decommissioning. This evokes human capital literature highlighting that individuals in modern work are increasingly responsible for their human capital, at their own cost; and that employers are increasingly divesting of the cost and responsibility of human capital (Fleming, 2017; King, 2004b).

Given the importance of oil and gas human capital to the future energy sector, it would be beneficial to offer more financial support to the workforce as they pursue reskilling.

Further barriers to accessing work in renewable energies

Two further barriers to accessing work in renewable energy were identified: stigmatisation of oil and gas workers; and bureaucracy.

Firstly, the stigmatisation of oil and gas workers by other industries was found to create barriers to re-employment, both in renewable energies and in other industries. Participants seeking work in renewable energies described feeling stereotyped by employers for their associate with polluting fossil fuels, which they felt reduced their employability. In other industries, several workers described how traditionally high oil and gas salaries created a stereotype of fickle workers who would return to oil and gas to make more money when industry activity picks up during upturns. This contrasts with findings from a previous interview study with Aberdeen stakeholders (Swennenhuis et al., 2020), who concluded that North Sea oil and gas workers may be reluctant to take less well-paid work in other sectors. Instead, these results suggest that oil and gas workers who are willing to take a pay cut may be discriminated against because of their previously high salaries.

Secondly, the bureaucracy of offshore certifications was identified as a significant barrier to accessing work opportunities in renewable energies. Offshore workers described the need to hold two different sets of certificates to enable them to work on oil and gas and renewables installations, despite much overlap between the two. While employers often fund these costs for their employees, independent contractors and unemployed people must personally bear significant costs to remain available for all work opportunities. Thus, bureaucracy was identified as a key barrier to obtaining work in renewable energies.

Neither stigmatisation of oil and gas workers nor bureaucracy has been identified in previous literature as a barrier to transitioning from oil and gas to renewables. The existence of both barriers seems incompatible with the general industry view that skilled oil and gas workers are critical in driving the energy transition forward (OPITO, 2018; RGU ETI, 2021) and with industry goals to equip workers for an '*all-energy career*' spanning different kinds of energy production (AGCC, 2022, p21). Tackling both barriers is important to tackle to help retain oil and gas workers in the evolving offshore energy sector.

5.2 Job security and quality of employment

Section 5.1 discussed how structural features of the UK oil and gas industry can influence access to re-employment success via access to employment, both within and beyond the oil and gas industry. This section focuses on a second way in which structural features of UK oil and gas influences access to re-employment success: the impact of low job security on workers' mental health.

Low job security also influences the quality of work accepted, both before and after job loss. This therefore raises the question of the relevance of 'decent' work to oil and gas workers before and after job loss; and therefore, its relevance to the *Just Transition* construct.

Low job security and mental health

The cyclical nature of the UK's oil and gas industry has created endemic low job security. For many workers, this causes stress, which can be exacerbated by money worries during periods of unemployment. This stress can impact an individual's mental health, which was identified as one of the key resources that enables an individual to act with agency during their search for re-employment after job loss (discussed in more detail in Section 5.3). Thus, the industry's low job security was interpreted as potentially reducing access to re-employment, by constraining individual agency in the job search. Notably, individual differences play a key role in how each person reacts to the stress of job loss and unemployment (Lazarus & Folkman, 1984; Leana & Feldman, 1992). Therefore, while some workers may experience damage to their mental health and their ability to exercise agency, others will not.

The low job security of oil and gas industries globally has been fairly well documented in previous literature (Mackie, 2004; GETI, 2021; Milliken & Lindner, 2023). Furthermore, the impact of low job security on mental health is not a novel finding. These findings echo research highlighting that the experience of job insecurity creates a risk for mental health in various contexts (Allan, Autin et al., 2021; de Witte et al., 2016).

However, no previous research has explored the mental health impact of job security in the specific context of this study. Previous research has been conducted on stress, wellbeing and mental health for UK oil and gas workers. However, this field of research focuses largely on the stress and mental health issues experienced by oil and gas workers employed on North Sea offshore installations (e.g. Parkes, 1992; Sutherland & Cooper, 1996). Therefore, this study is unique in highlighting the mental health impact of the low job security experienced by UK oil and gas workers.

Quality of re-employment

Notably, low job security characterized most participants' narratives of employment both before and after job loss. Job security is closely linked to quality of employment, as highlighted by Warhurst & Knox (2022). Therefore, a relevant issue is the quality of employment and working arrangements in oil and gas, both before and after job loss.

As described in Chapter 1 (Section 1.5), the study defined re-employment success subjectively, depending on how individuals felt about the outcome. During data collection, the researcher sought to understand whether participants felt that they had achieved a good outcome, or were still searching for better quality work. Half of the 24 Group 1 participants (individual workers) described themselves as

having achieved re-employment success by the time of interview. They were happy with their re-employment, and were not currently seeking a better employment situation. The other 12 participants described themselves as not yet having achieved re-employment success: they had not yet found work that adhered to their skillset or interests, which provided equivalent satisfaction to their oil and gas work prior to job loss.

Re-employment success, or lack thereof, was generally defined by participants as whether a job adhered to their skillset and personal interests, as defined by Wanberg (2012). Evaluating re-employment success also involved whether they felt that the work they had found provided an equivalent satisfaction to the work they had lost in oil and gas, as observed by Ng & Feldman (2014). Meanwhile, participants did not generally use their new working arrangement to define successful re-employment. Working arrangements achieved ranged from permanent, full-time employment to less secure forms of work such as temporary, part-time, or self-employment, and contract work (Warhurst & Knox, 2022). In this industry of low job security, less secure working arrangements were not considered to be a less successful form of re-employment.

For participants still seeking work, seeking underemployment was a common reality. Forms of underemployment sought were oil and gas work below their skill level; and much less skilled work, for example in bars or supermarkets, either to earn money or to provide a distraction during unemployment. Underemployment has been defined as '*working in a job that is below the employee's full working capacity*' (McKee-Ryan & Harvey, 2011, p963). The prevalence of underemployment amongst interviewees is consistent with Feldman (1996), whose theory proposes that underemployment is more likely among higher-skilled workers and workers made redundant; both factors relevant to this study's participant pool. However, it also highlights the low security working arrangements accepted by many oil and gas workers in their search for re-employment.

Therefore, low security working arrangements, and underemployment, are common experiences in the UK oil and gas industry. This calls into question the relevance of 'decent' work for UK oil and gas workers.

The relevance of 'decent work'

As explored in Chapter 1, the idea of 'decent work' has been internationally adopted to define a *Just Transition* for fossil fuel workers (UNFCCC, 2015). However, the study's findings about low job security, and quality of employment both before and after job loss, highlight the inappropriateness of 'decent work' to define a *Just Transition* for UK oil and gas workers.

Decent work is partly characterized by fairness and dignity (Blustein et al., 2016), both of which represent the challenging, highly paid work in the UK's oil and gas industry. However, it is also characterised by stability and security (Blustein et al., 2016). Therefore, due to the lack of stability

and security felt by many UK oil and gas workers, it is proposed that UK oil and gas workers did not enjoy decent work before their job loss; and therefore, decent work would not represent a *Just Transition* for them.

Indeed, the endemic low job security faced by many workers in the UK's upstream oil and gas industry evokes the opposite of decent work: precarious work (Allan, Autin et al., 2021). Precarious work is typically associated with underemployment, low-paid work, and a lack of workplace rights (Allan, Autin et al., 2021). Therefore, the construct of precarious work may not be typically associated with the participants of this study: well-paid, highly skilled professional oil and gas workers. However, precarious work is also characterised by irregular work, involuntary temporary contracts, and economic insecurity (Allan, Autin et al., 2021), factors which are highly relevant to UK oil and gas workers.

Looking to the future, these finding echoes discourse about the importance of boosting job security to improve worker wellbeing (Warhurst & Knox, 2022). Most previous research on precarious work has been conducted at a macro level (Allan, Autin et al., 2021), and the results of this study highlight the value of researching individuals' subjective experience of precarious work, in particular, highly skilled-individuals not usually associated with the construct. Therefore, the UK oil and gas industry would be a valuable case study for researchers interested in the reality of job security, and the impact on its workers.

The health impact of precarious work in UK oil and gas is discussed in more detail in the following section.

5.3 Acting with agency in the search for re-employment after job loss from UK oil and gas

This section interprets findings relevant to the study's second research question in relation to relevant literature. Initially, the holistic explanatory model introduced at the end of Chapter 4 is discussed. The discussion then turns to analysing the health, coping and job search resources that enable an individual to exercise agency in their search for re-employment after job loss from UK oil and gas; and the other factors of luck, time and demographics.

Explanatory model

At the end of Chapter 4, the study's findings were synthesised into an explanatory model, which aimed to capture what it takes to act with agency after job loss from UK oil and gas. The model comprised the two goals of the re-employment process (the hidden goal of managing the mental health spiral, and the explicit goal of finding alternative employment), which were portrayed as mountains to climb. Agentic resources (health, coping and job search resources) were portrayed as helping the individual to climb these two mountains. Health resources (physical and mental health) were interpreted as being foundational to the exercise of agency after job loss. Coping and job search

resources were identified as supporting the individual to act with agency in achieving the goals of managing the mental health spiral, and finding re-employment, respectively. The role of luck, time and demographics were portrayed as weather, which may help or hinder the individual as they climb. Finally, the model highlighted the influence of the UK oil and gas industry context on the two goals of the re-employment process, and on the individual's agentic resources.

Various models integrating a range of individual-level factors involved finding re-employment after job loss have been proposed in previous literature. Such models derive largely from longitudinal qualitative studies (e.g. Brouwer et al., 2015; Wanberg et al., 1999; Solove et al., 2015; Vinokur & Schul, 2002; van Hoye et al., 2015; van Hooft et al., 2021). Other approaches include meta-analyses of previous studies (van Hooft et al., 2021; van Hooft et al., 2021) and the application of existing theories to the re-employment context (McArdle et al., 2007; Thompson et al., 2017). These authors generally measure the relationship between individual-level predictors of re-employment and job search behaviours and/or re-employment status. This field of literature highlights various individual-level predictors of re-employment, many of which overlap with the agentic resources which were identified in this study and are discussed in the following sub-sections.

The model proposed by this study differs from this well-established field of literature for four reasons. Firstly, as most previous studies are quantitative or theoretical, the factors researched were informed solely by previous academic research. In contrast, this study was qualitative, and its process of abductive reasoning created the opportunity to identify new factors relevant to the job search process, as raised during interviews by participants. Thus, although the study's analysis of individual-level factors involved in the search for re-employment was initially guided by academic literature, the final results also integrated the researcher's interpretation of participant data. Therefore, this study was able to identify new factors raised by participants as being important to their re-employment process, and was not limited to a list of factors pre-decided by the researcher.

Secondly, these studies mostly seek to measure the relationship between individual-level predictors and job search behaviours and re-employment status. This study instead focused on what it takes to act with agency in the search for re-employment, after job loss from a declining industry. Therefore, this study sought to achieve a different research aim, and as a result, produced a more holistic analysis of relevant factors.

Thirdly, studies in this field of literature are generally not specific to one context. Previous studies are based on large national survey data of unemployed people (e.g. Brouwer et al., 2015); academic survey data not specific to one industry context (e.g. McArdle et al., 2007); meta-analyses of previous papers (e.g. van Hooft et al., 2021) or theory (e.g. Thompson et al., 2017). This study is novel in being specific to the UK's oil and gas industry. As analysed in Chapter 4, this unique industry context

has a strong influence over an individual's access to re-employment, and their exercise of agency during the search for work.

Fourthly, the explanatory model is fairly unique in awarding prominence to mental health, and highlighting its dynamic nature. It recognised mental health as so important, and so at risk during unemployment, that managing the mental health spiral was proposed as a key goal of the re-employment process. Although widely recognized as being an important asset in the re-employment process, mental health has fairly seldom been integrated into theories and models of employability and re-employability (e.g. Wanberg et al., 1999; McArdle et al., 2007; Solove et al., 2015; Thompson et al., 2017; Kanfer et al., 2001; van Hoye et al., 2015; Latack et al., 1995). This study follows the precedent set by Vinokur & Schul (2002), and Van Hooft et al.'s (2021) who include mental health as a core antecedent in a holistic analysis of factors enabling re-employment, a precedent followed by this study. However, this study is relatively unique in presenting mental health as something to be managed in a dynamic process, rather than simply one variable influencing re-employment outcomes.

The rest of this section is organized according to the agentic (health, coping and job search) resources, and other factors of luck, time and demographics, which were identified as enabling the individual to act with agency during their search for re-employment.

Health resources

Findings suggest that possessing good physical and mental health – labelled as 'health resources' – provides the foundation of acting with agency in the search for re-employment. Physical health enables practical access to re-employment; for example, being in good enough health to apply for jobs and attend interviews. It also influences mental health. For example, an illness or injury preventing an individual from pursuing work opportunities can provoke a deterioration in mental health. Meanwhile, good mental health was interpreted as being critical for both supporting an individual to cope with the stress of job loss and unemployment, and to act with agency when job seeking in a hostile employment environment.

These findings align with quantitative, longitudinal studies which have found that reduced physical or mental health reduces employment prospects for job seekers, in Europe and North America (Schuring et al., 2013; Skärlund et al., 2012; Stolove et al., 2017; Brouwer et al., 2015; Carlier et al., 2014). However, these studies are based on national survey data and large-scale academic surveys across employment contexts, and this study provides evidence relevant specifically to the UK oil and gas industry.

Thus, physical and mental health were both understood to be critical to acting with agency during the search for re-employment. However, the stress of job loss and unemployment, and the industry's low job security, were both interpreted as endangering an individual's mental health. Thus, at the very

time when mental health is needed to enable an individual to act with agency, it is also at risk. As discussed in Section 5.2, the risk to mental health was further exacerbated by the industry's low job security, which creates stress for much of its workforce.

This is consistent with meta-analytic evidence suggesting that an individual's mental health is often adversely impacted by the experience of unemployment (McKee-Ryan et al., 2005; Paul & Moser, 2009). However, while McKee-Ryan et al. (2005) and Paul & Moser (2009) further found that unemployment also reduces physical health, this study did not find evidence for the same. Physical health was raised by some participants, who described the importance of staying physically healthy through use of exercise and avoiding too much alcohol during unemployment; but it was not a major theme. Therefore, this study does not attempt to propose findings about the impact of job loss and unemployment on physical health, and instead proposes only that physical health is an important resource to act with agency during unemployment.

Mental health was interpreted as being so important to acting with agency in the job search that managing the 'mental health spiral' was interpreted as the hidden goal of re-employment, equal in importance to finding work again. As discussed in the subsequent section, 'coping' resources were interpreted as supporting an individual to manage the spiral. High levels of psychological and practical coping resources may help the individual to stay on a positive spiral. However, an individual with low levels of these resources may find themselves slipping more quickly into a negative spiral. Furthermore, the relationship between coping resources and the spiral is reciprocal. While coping resources can help an individual to manage the spiral, a negative spiral may also erode them. For example, an individual drawn into a negative spiral may find that, as the spiral picks up momentum, it reduces their psychological coping resources and causes damage to their social support system.

The machinations of the mental health spiral evoke the work of Lindsley et al. (1995), who propose the 'efficacy-performance' psychological spiral, in the context of organisations and management. According to Lindsley et al. (1995, p645), there is a '*positive, cyclic relationship'* between an individual's perceived efficacy, and their performance in their job. In their efficacy-performance model, an increase in self-efficacy predicts an increase in performance, which in turn produced another increase in self-efficacy in a positive cycle. Meanwhile, a decrease in either variable provokes a reciprocal decrease in the other, creating a negative cycle. However, the authors note that a positive spiral cannot continue indefinitely, and must come down at some point. Therefore, for Lindsley et al. (1995), the goal is to achieve a stable balance between self-efficacy and performance.

Applying these ideas to the mental health spiral proposed in Chapter 4, it is proposed that there is a '*positive, cyclical relationship*' (Lindsley et al., 1995, p645) between an individual's coping resources, and their mental health. Therefore, an individual with high levels of coping resources sees an increase in their mental health; and, conversely, lower levels of the coping resources predict lower

mental health. Lindsley et al.'s (1995) theory further enhances the mental health spiral introduced in this study by observing that a positive cycle cannot last indefinitely: it must come down at some point. Thus, for people seeking re-employment from UK oil and gas, it is more sustainable to aim for a balance between their levels of coping resources and their mental health, rather than trying to continually create a more positive spiral.

This emphasis on stability also evokes the findings of a seminal job loss paper by Latack et al. (1995), who define 'coping' in the context of job loss as a '*purposive process through which people attempt to maintain equilibrium in various facets of their lives'* (p314). Therefore, these studies enhance the findings of this study by highlighting the need for stability and balance between mental health, coping resources, and the individual's quality of life during the job search.

Coping and job search resources

In addition to health resources, two further forms of agentic resource were identified: coping and job search. Coping resources – comprising both psychological and practical elements- were interpreted as supporting the individual manage the mental health spiral, by reducing stress. Meanwhile, job search resources support the individual in their search for replacement work, by providing motivation and practical access to employment.

The psychological and practical resources that support an individual to manage their emotions and resolve problems during times of stress have been conceptualised in a seminal work on coping and stress by Lazarus & Folkman (1984), and fairly widely by job loss researchers (Holmes & Werbel, 1992; Prussia et al., 2001; Kinicki et al., 2000; Latack et al., 1995; Solove et al., 2015; Leana et al., 1998; Vinokur & Schul, 2002). However, the terminology adopted by academics to capture what this study terms as 'agentic' resources (health, coping and job search) is inconsistent.

For example, Lazarus & Folkman (1984) define as 'coping resources' as '*things that people draw upon to help with the various demands of living*' (cited in Holmes & Werbel, 1992, p23). They identify six basic categories of resource: '*health, positive beliefs; problem-solving skills, social skills, social support and material resources*, (Lazarus & Folkman, 1984, cited in Holmes & Werbel, 1992, p23). In this study's findings, these six resources were also identified across the categories of health, coping and job search resources: in the form of physical and mental health; positive mindset; psychological job search resources such as resilience, professional networks, social support and financial resources. Thus, what Lazarus & Folkman (1984) present as general coping resources is conceptualized with more granularity in this study as three categories of agentic resource, each with a different role in enabling the individual to act with agency.

Other researchers have captured the difference between coping and job search resources, similar to the distinction made in this study. For example, Kinicki et al. (2000) and Solove et al. (2015) describe

these respectively as emotion-focused coping (where one addresses their emotional response), as distinct from problem-focused coping (where one attempts to resolve the problem that is creating stress – the lack of employment). However, this study differs by positioning physical and mental health as a further category of resource.

In summary, the ideas of coping and job search resources from this study's analysis are well covered in previous literature. However, they are discussed using different terminology, and are organised in different categories. Furthermore, this study identifies more and different types of constructs that help an individual to act with agency.

The rest of this section discusses the agentic resources, and other factors that enable agency, in relation to research on the specific constructs identified in this study's results. Notably, previous literature documents the links between many of the psychological construct identified as both coping and job search resources. For example, hope has been closely aligned with goals (Snyder, 2002), self-efficacy with resilience (McLarnon et al., 2020) and adaptability with the locus of control, self-efficacy and proactivity (van den Horst, Klehe & van der Heijden, 2017). This discussion does not attempt to address the potential links between them in detail. Instead, as academic interest exists in each concept, each is discussed as a construct in its own right.

Coping resources

Coping resources were identified as comprising both psychological and practical elements. Firstly, psychological coping resources identified as enabling agency were positivity, locus of control, tolerance for uncertainty, and a diversified identity.

A positive mindset was interpreted as playing a key role in agency. A positive mindset helped individuals to cope with the stress of job-hunting in a difficult employment market and dealing with setbacks such as a lack of feedback for the job applications submitted. These results were consistent with literature suggesting that a positive mindset was an important coping resource, helping individuals in maintaining emotional wellbeing during a challenging time (Duffy et al., 2013; Lai & Wong, 1997; Wanberg, 1997; Wright et al., 2022). The coping mechanism of a positive mindset was judged to be more important in exercising agency during the search for re-employment than its job search function; although it was also interpreted as helping individuals to come across well in interviews.

Optimism has previously been portrayed as an important element of agency (Hitlin & Elder, 2007; Hitlin & Johnson, 2015; Scheier & Carver, 1987) and supporting the re-employment process (Armstrong-Stassen, 1994; Leana & Feldman, 1995). However, unlike these previous studies, the researcher did not consider the term 'optimism' to be appropriate in this context, following

discussions with interview participants. Instead, 'positive mindset' was judged to be a more sensitive term than 'optimism' during what was described by participants as a dark and challenging time.

Having a balanced locus of control was interpreted as an important coping resource enabling the individual to focus on what is within their control while also acknowledging what is outside their control. This helped to reduce stress when the job market of this declining industry is outside their control and hostile during industry downturns and to focus their energies on the personal circumstances they can control. The results of this study agree to an extent with the traditional locus of control research, which emphasises the benefits of having an internal locus of control, not an external one, during unemployment (Caliendo et al., 2015; Ginexi, Howe & Caplan, 2000; Holmes & Werbel, 1992; Mallinckrodt & Fretz, 1988; Vinokur & Schul, 2002). However, in contrast to these studies, findings suggest that a locus which is balanced between internal and external forces, is more valuable than a purely internal locus of control. This aligns instead with more recent research, which acknowledges that the internal and external loci of control may both be salient in different situations (Galvin et al., 2018; van Hooft & Crossley, 2008).

Tolerance for uncertainty, or 'uncertainty tolerance', has been defined as a '*set of… psychological responses… provoked by the conscious awareness of ignorance about particular aspects of the world'* (Hillen et al., 2017, p62). In this study, uncertainty intolerance was associated with reducing the stress of not knowing how long unemployment would last, particularly during industry downturns when few jobs are available. Furthermore, it was interpreted as helping individuals to cope with the long-term uncertainty of their careers in an evolving industry, where future job availability and skills requirements are not clear. A tolerance for uncertainty was therefore interpreted as a coping resource. In psychological literature in other contexts, uncertainty tolerance has been linked to better emotional wellbeing (Hillen et al., 2017; Korkmaz & Güloğlu, 2021). However, tolerance for uncertainty has not previously been conceptualised in academic literature as an asset for supporting an individual to cope with the stress of re-employment.

A diversified identity was also interpreted as a coping resource. Identity has been defined as the answer to the question, '*who am I*?' (Ibarra, 2007, p1). An individual has multiple identities that may be salient depending on the situation (Tajfel & Turner, 1986; Stryker, 1987; Ibarra, 2007). Work identity, gained from employment, is a prominent identity for many individuals (Jahoda, 1982; Kelvin, 1981; Ibarra, 2007). This was interpreted to be particularly relevant for the oil and gas workers interviewed, many of whom had dedicated years or decades to building their careers in this highly skilled industry. Thus, a loss of work identity due to involuntary job loss was often experienced as distressing, consistent with literature on identity threats (Petriglieri, 2011).

Alternative identities, for example, related to hobbies, families, friends and other work projects, helped lessen the impact of losing an important oil and gas work identity. This finding aligns with

literature proposing that having alternative identities available can make it easier to disassociate from an important identity when it is lost (Ebaugh, 1988; Kira & Klehe, 2016). However, findings diverge from literature suggesting that a clear career identity is important for a sense of continuity during significant changes in working circumstances (McArdle et al.; 2007; Denyer & Rowson, 2022).

Practical coping resources were identified as social support and personal finances.

Social support from friends, family, and former colleagues was interpreted as offering a valuable coping resource, helping to reduce stress on the individual and providing a distraction. This is consistent with previous literature highlighting the value of social support from friends and family as helping an individual to cope emotionally with job loss and boosting emotional wellbeing during the search for re-employment (Solove et al., 2015; Duffy et al., 2016; Latack et al., 1995; McKee-Ryan et al., 2005; Lazarus & Folkman, 1984; Creed & Moore, 2006; Tuncay & Yildirim, 2015; Kanfer et al., 2001). Furthermore, during industry downturns, the volume of people made redundant created a sense of solidarity, evoking recent academic interest in solidarity among workers in challenging conditions (Beck & Brook, 2020).

However, like all resources, social support is not static. The findings of this study also indicate that the stress caused by extended periods of unemployment can damage these important relationships at the very time they are needed the most, particularly family relationships at home. This may be exacerbated for workers used to travelling offshore in regular shift patterns, who struggle to adapt to life at home all the time. The potentially damaging impact of unemployment on social relationships has been documented by some previous researchers (Choudhury & Broman, 2016; Latack et al., 1995; Blom & Perelli-Harris, 2021). However, this dynamism has not been clearly integrated into literature on the role of social support during the search for re-employment (Solove et al., 2015; Duffy et al., 2016; Latack et al., 1995; McKee-Ryan et al., 2005; Lazarus & Folkman, 1984; Creed & Moore, 2006; Tuncay & Yildirim, 2015; Kanfer et al., 2001).

Personal finances were interpreted as exerting a key influence on the experience of unemployment. Participants with significant financial breathing room from savings, no mortgages or grown-up children left at home could take time to think about their next step, even considering different career opportunities. However, for most people, with more limited or no financial resources, money was a key stressor during unemployment. This stress built up over time, as the period of unemployment extended.

This is consistent with literature recognising financial worries as a key stressor during unemployment and a risk to mental health, thus potentially reducing job search behaviours (Price et al., 2002; Kanfer et al., 2001; Vinokur & Shul, 2002; Wanberg et al., 1999; Lim et al., 2016; Gerards & Welter, 2022; Dahling et al., 2013; Jackson & Warr, 1984). Also consistent with findings by various authors

(Vinokur & Shul, 2002; Kanfer et al.; 2001; Kinicki et al., 2000; Solove et al., 2015), financial need was also interpreted as a motivator to find work again. However, the primary role of finances in this study was interpreted as a coping resource, given the great stress created by money worries during unemployment.

As suggested by Swennenhuis et al. (2020), the well-paid nature of the oil and gas industry influenced the role of financial resources. High salaries allow workers to save up for inevitable periods of unemployment. Participants described their discipline in financial prudence in preparation for downturns, although others had not and need to find temporary work, often underemployment, for money during the job search. Financial planning can also be learned through experience: participants reported having learned from previous periods of unemployment and prepared themselves better financially for subsequent ones through savings or managing outgoings. Furthermore, high salaries can also lead to high outgoings, which must be cut back immediately after a job loss, often requiring a lifestyle change.

Support from spouses, borrowing money from friends or family, accepting underemployment, and the benefits system were described by those without savings. However, participants described feeling shame in asking for financial assistance, both from their social support and from benefits. This is consistent with previous research documenting the stigma felt by benefits claimants in the UK, and the barrier this can create in accessing support (Baumberg, 2016).

Job search resources

Job search resources identified also comprise both psychological and practical elements. Psychological job search resources identified were self-efficacy, hope, resilience, clear goals and adaptability.

Bandura (2001) proposes self-efficacy as the core of agency in any context. In this study, self-efficacy was interpreted as encouraging workers to act in the belief that their actions will make a difference, which motivated the individual to engage in proactive job searching. This is consistent with previous literature on agency and re-employment (Bandura, 2001; Latack et al., 1995; Thompson et, al, 2017; Lent & Brown 2013; Fort et al., 2011; Vinokur & Shul, 2002; Wanberg et al., 1999; van Hooft et al., 2022; Holmes & Werbel, 1992; Kim et al., 2019; Kanfer et al., 2001; Chen & Lim, 2012). in this study, self-efficacy was interpreted as being more relevant to the job search than to managing the spiral, in contrast to research positioning self-efficacy as supporting emotional wellbeing (Kim et al., 2019; Kanfer et al., 2001; Chen & Lim, 2012).

Resilience has been defined as the '*capacity to "bounce back" from adversity*' (Luthans, Luthans & Luthans, 2004, p47). It can enable '*positive adaptation*' in challenging situations such as a period of unemployment and seeking re-employment (Fletcher & Sarkar, 2013, p12). In this study, resilience

was interpreted as being an important resource to keep going in a job hunt that can last for months or even years. This aligns with previous research suggesting that resilience as supporting individuals to find re-employment (Chen & Lim, 2012; Fleig-Palmer et al., 2009; McLarnon et al., 2020; Scrimpshire & Lensges, 2021; Wanberg, 1997). However, the identification of resilience as a job search resource, rather than a coping resource, departs from studies presenting resilience as more relevant to supporting mental wellbeing (Moorhouse & Caltabiano, 2007; Stolove et al., 2017).

The cyclical nature of oil and gas was interpreted as being linked to the development of resilience in its workforce. Several workers described developing resilience during the job hunt in response to low job security, and previous periods of redundancy and unemployment. This echoes findings by Mahdiani et al. (2021), whose narrative study of residents of a Canadian town dependent on oil and gas found that the volatile employment context promoted resilience. Meanwhile, participants described how the physically demanding offshore environment was interpreted as encouraging the development of resilience among its workforce. These findings are consistent with literature suggesting that resilience can be developed with experience (Luthans & Youssef-Morgan, 2017; Fleig-Palmer et al., 2009), while adding valuable evidence of how industry context may influence workers' development of resilience.

Hope has been defined as '*a positive motivational state*' linked to agency (Snyder et al., 1991, p. 287*).* Hope was interpreted as providing momentum in the practical job search and motivation to keep going with applications and job-seeking behaviours despite the challenging job market and lack of feedback from employers. While not a major theme in previous research on agency and re-employment, hope has been associated with re-employment success as part of Psychological Capital, in tandem with the other agentic resources of self-efficacy, resilience and a positive mindset (Chen & Lim, 2012). Despite close links, hope was interpreted as a separate construct to the coping resource of positive mindset due to its motivational powers (Luthans & Youssef-Morgan, 2017). This agrees with literature on the close links between hope, goals, and agency (Luthans & Youssef-Morgan, 2017; Snyder, 2002).

In this study, clear goals for the re-employment search were interpreted as helping individuals to focus their energy and effort during the job search. This aligns with previous literature emphasising the importance of planning and working towards a goal in obtaining quality re-employment (Creed et al., 2009; van Hooft & Noordzij, 2009; Thompson et al., 2017; Prussia et al., 2001; Körner et al., 2015; Zikic & Khlehe, 2006; Watermann et al., 2021). However, while clear goals are important, fixed and immovable goals were not interpreted as helping the individual during unemployment. Thus, clear goals were interpreted as going hand in hand with adaptability. This evokes findings from Niessen et al. (2009) and Watermann et al. (2021), who distinguish between the process of goal pursuit in the search for re-employment, and goal adjustment when goal pursuit is not successful.

Adaptability was interpreted as a job search resource. Findings suggest that while it is important to aim for a clear goal to focus energy and job search efforts, it is also important to be able to adapt the goal and the journey to achieve it as required by the context. The recognition of adaptability as a job search resource is consistent with literature identifying it as a useful attribute for people seeking work following job loss (Duffy et al., 2016; McArdle et al., 2007; Zikic & Klehe, 2006; Koen et al., 2010; Andersson, 2015). It is also consistent with research on the UK's evolving energy sector, which positions adaptability as a critical attribute for oil and gas workers as the sector's skill requirements evolve (McQuaid & Bergmann, 2016; OPITO, 2019).

However, in contrast to this literature (Duffy et al., 2016; McArdle et al., 2007; Zikic & Klehe, 2006; Koen et al., 2010; Andersson, 2015; McQuaid & Bergmann, 2016; OPITO, 2019) adaptability alone was not interpreted to be sufficient alone as a job search resource. Adaptability must go hand in hand with a clear goal (even if that goal changes over time). Without a clear goal, the overly adaptable worker risks lacking direction, which can cause distress, as noted by Baruch & Vardi (2016). This evokes findings by Vansteenkiste et al. (2016), who suggest that too much flexibility in the job search can result in underemployment or a lower chance of re-employment.

Meanwhile, practical job search resources were identified as transferable human capital, professional networks, proactive behaviours, and individually tailored external support.

Transferable human capital was identified as the most important practical job search resource, enabling the individual to act with agency in a changing sector. Results highlight that oil and gas workers have high levels of human capital, both education and experience, as is widely documented in academic and industry literature (Allan & Ross, 2019*;* Dominish et al., 2019; RGU ETI, 2021; OPITO, 2019). However, for most workers, this high level of human capital loses value during downturns. This is consistent with literature suggesting that human capital loses value when the job market does not demand it (Dobbins et al., 2014). Workers must therefore identify and leverage, or develop, transferable skills. However, this is not equally easy for all workers. In particular, highly specialized geoscientists described themselves as having low transferable human capital. Furthermore, findings identified challenges to the narrative of reskilling and upskilling. The issue of human capital, and the industry's evolving skills requirements, is discussed in more detail in section 5.1.

Social capital (Lin, 2001) in the form of professional oil and gas networks was identified as an important job search resource. Findings reveal that the UK's oil and gas industry is unusually highly networked, with jobs often being obtained through social contacts rather than through formal applications. This is consistent with literature documenting the utility of professional social networks in finding re-employment (McArdle et al., 2007; Wanberg et al., 1999; van Hoye et al., 2009; Wanberg et al., 2000), although the small and close-knit world of UK oil and gas renders social networks even more important in this context.

However, like human capital, social capital can lose value during industry downturns, when few job opportunities are available. Specific to the period during which data were collected, the use of networking was hindered during Covid-19, when individuals could not be at their desks to pick up phone calls or meet people at in-person events. This finding potentially adds nuance to literature on job-seeking during Covid-19, which focuses on measuring the intensity of job search behaviours during the pandemic, rather than the barriers encountered (e.g. Balgová et al., 2022; Hensvik et al., 2021).

Furthermore, some participants described being reluctant to leverage their social networks, citing a dislike of nepotism and a wish not to annoy their contacts by asking for too much help. This evokes Casciaro et al.'s (2014, p705) analysis of networking as a '*dirty*' behaviour. However, these findings contrast with previous research identifying shame and fear of stigma as barriers to leveraging professional networks during unemployment (Peterie et al., 2019). In this industry where job loss is prevalent during downturns, and most workers are impacted at some point, participants most participants described themselves as proactive in reaching out to their network for help. Shame was not identified as a barrier to leveraging professional networks in the search for re-employment.

External support from individuals and organisations, designed to help an individual through the experience of job loss, unemployment and the search for re-employment, was described by participants as a useful job search resource. However, the helpfulness of external support was caveated. As described in Section 5.1, the UK's oil and gas industry is a unique environment. Therefore, external support was only interpreted as being helpful when it was tailored to the specific individual, and when the person providing help understood the idiosyncratic nature of the UK oil and gas industry. Generic advice from job-seeking services, which does not integrate knowledge of the oil and gas industry context, was therefore not seen as being a helpful resource.

The need for support tailored to the individual and the industry context adds a useful nuance to literature describing the benefits of training and interventions to job seekers (De Battisti et al., 2014; Liu et al., 2014; Hulshof et al., 2019). Furthermore, one-to-one support in the form of coaching or counselling was described as useful by participants. This is consistent with literature on the benefits of coaching and counselling for job seekers (Behrendt et al., 2021; Grützmacher & Schermuly, 2021; Schmidt & Flatten, 2021; van Hooft, 2014).

Proactive job search behaviours were identified as a final job search resource. Proactively seeking opportunities, and reaching out to industry contacts, was described as an important element of the job search by many participants in this highly networked industry. Proactive job search behaviours were also interpreted as encompassing proactivity and conscientiousness, diverging from studies presenting these attributes as personality traits (Kanfer et al., 2001). This is consistent with the wide recognition

of job search behaviours as leading to positive re-employment outcomes (Kanfer et al., 2001; Amato et al., 2016; Wanberg et al., 2005; Saks, 2006).

Re-employment literature generally treats job search behaviours as a consequence of individual-level variables such as self-efficacy; and as a predictor of re-employment outcomes (Kanfer et al., 2001; Amato et al., 2016; Wanberg et al., 2005; Saks, 2006). However, in this context, proactive behaviours were interpreted as being less important in the job search than is portrayed in this field of literature. In the UK's cyclical and highly networked oil and gas industry, the job market may negate job search efforts. For example, the poor job market caused by an industry downturn, when few job opportunities are available, may render job search behaviours obsolete. Therefore, the researcher understood proactive behaviours as a resource on which the individual may draw in their job search, comparable to social capital; rather than as a mediating variable between individual factors and re-employment success.

Furthermore, proactive job search behaviours were interpreted as potentially less valuable than social capital, in this highly networked industry where job opportunities are often communicated and obtained through social contacts. This supports Šverko et al.'s (2008) conclusion that the importance of job search behaviours may have been over-emphasised in re-employment literature.

Non-agentic factors: Time, luck and demographics

The goal of finding re-employment after job loss from the UK oil and gas industry is not as simple as obtaining this list of agentic resources. Other factors help and hinder an individual in achieving re-employment, and in building and maintaining high levels of the agentic resources needed to reach this goal. In this study, time, luck and demographics were interpreted as being influential factors rather than agentic resources, given the lack of control an individual has over them.

Firstly, the agentic resources supporting an individual to manage their job search are dynamic, not static. Time was interpreted as eroding the psychological and practical resources required to manage the mental health spiral, and to achieve re-employment. For example, the longer someone is at home and not at work, the greater the opportunity for tension to build in their family relationships and for a positive mindset to become negative. Thus, paradoxically, the agentic resources are needed at the very time when they might be eroded, as unemployment is a deeply stressful experience for most. Furthermore, the more time passes, the greater the risk of a negative mental health spiral gaining momentum.

The impact of time aligns with some previous literature emphasising that the agentic resources may deplete over time (e.g. Latack et al., 1995). Long periods of unemployment have been associated with decreased mental wellbeing, reduced networking activities due to social isolation, and reduced self-

efficacy in the form of re-employment expectations (Jackson & Warr, 1984; Warr & Jackson, 1984; Petrucci et al., 2015; Peterie et al., 2019).

However, in a longitudinal study of long-term unemployed people in the Netherlands, Koen et al. (2013) found that interventions aimed at increasing two of the job search resources identified in this analysis - adaptability and human capital - can help boost employability. Therefore, even for individuals who are enduring long and stressful stretches of unemployment, the agentic resources identified in this analysis may support them.

Secondly, luck was interpreted as being a key influence on the search for re-employment. Despite all the agentic resources required to persevere with the job search and to manage the spiral, a period of unemployment can be ended by a stroke of luck if the right job opportunity comes up at the right time. Luck has not been previously identified as a common theme in re-employment literature. However, beyond re-employment literature, this finding is consistent with Bandura's (2006) acknowledgement that luck can enhance the exercise of agency; and with vocational literature acknowledging the role of chance events on career paths (Pryor & Bright, 2003, 2014; Mitchell et al., 1999).

Previous literature has also suggested that an individual can increase their luck, and therefore agency, by proactively engaging in activities where events or encounters might work in their favour (Bandura, 2006, Austin, 1978; Mitchell et al., 1999). However, the researcher notes that increasing one's luck via activity may not be possible for those already struggling to manage the mental health spiral during a challenging period of unemployment.

Finally, participants' demographic characteristics were interpreted as potentially playing a helping or hindering role in the job search. As analysed in Chapter 4, a key cultural characteristic of the UK oil and gas industry is that it is dominated by a '*stale, male and pale*' demographic. However, individual participants' narratives told a more nuanced story. Notably, the researcher does not attempt to draw objective conclusions about whether demographic characteristics play a role in hiring decisions and impact an individual's employment prospects. Instead, conclusions are drawn about individuals' perception of whether age, gender and ethnicity may influence their search for re-employment.

Age was experienced by participants as a relevant factor in their job hunt. Despite the prevalence of older, or '*stale*' workers in oil and gas, older workers described themselves as feeling disadvantaged in the job market as the energy sector evolves. Participants over 50 described feeling at a disadvantage in the job hunt, particularly those contemplating career transitions to renewable energy and facing reskilling. These participants described worries of employer discrimination in favour of younger candidates, who may be seen as being easier and more willing to retrain. This is consistent with literature suggesting that older workers may be perceive themselves as being at a disadvantage in gaining work due to employer biases (Wanberg et al., 2016; Brouwer et al., 2015; Lassus et al., 2015).

These findings were not consistent with literature suggesting that older workers may need more help in reskilling (Evans & Phelan, 2016; Baran et al., 2020). This study's participants did not describe worries about their willingness or ability to reskill; their concern was solely about potential discrimination by employers.

Furthermore, older workers in this volatile industry were not interpreted as suffering from a greater loss of identity due to job loss than younger participants, as suggested by previous studies on age and job loss (Kira & Klehe, 2016; Gabriel et al., 2013). This may be due to the prevalence of job loss in oil and gas, which affects everyone and means that individuals become accustomed to multiple job losses over their careers, lessening the impact of losing a work identity.

Regarding gender, the two women interviewed did not describe feeling at a disadvantage in the search for re-employment, despite the male-dominated oil and gas workforce. This finding was therefore not consistent with literature identifying men as having better re-employment outcomes than women (Andersson, 2015; Vinokur & Schul, 2002), nor with studies suggesting that women are at a disadvantage in the energy transition (Baruah, 2017; Mohr, 2021; Walk et al., 2021; Baruah, 2017). However, the small number of women interviewed means that this conclusion is tentative, and research with a larger number of women would be needed to draw firmer conclusions.

Ethnicity was also perceived by some participants to play a role in the job search. While participants praised the advances made in the industry's diversity and inclusion strategies, they also described efforts as more talk than action. The only Black participant interviewed described perceiving their ethnicity as not only a factor in their current search for re-employment but also in their entire career path in oil and gas to date. This highlights that the industry's predominantly White workforce (OGUK, 2021c) and the culture of '*stale, male and pale*' may impact re-employment for minority ethnic groups. This is also consistent with literature suggesting that ethnic minorities could face higher barriers to re-employment in the UK (Li & Heath, 2020). Again, however, the small sample size of non-White individuals interviewed means that firm conclusions cannot be drawn about the role of ethnicity in the search for re-employment.

5.4 A *Just Transition* for UK oil and gas workers?

The overarching research aim of this study was to understand whether UK oil and gas workers are experiencing a *Just Transition*. This section addresses this aim directly. Firstly, the existence of justice for UK oil and gas workers facing job loss is analysed through the lens of the study's approach to justice (Sen, 2009), as introduced in Chapter 1. Then, interventions to promote justice for UK oil and gas workers are made.

Justice for UK oil and gas workers

According to this study's approach to justice (Sen, 2009), an individual can be judged as suffering an injustice if their capability to pursue goals that they value, and their freedom of choice to choose what those goals are, is constrained. In Chapter 2, this capability and freedom was aligned to individual agency, which is defined in this study as the capability to exert a force on the surrounding social and economic context, to influence their life. Therefore, this study holds that injustice has occurred if an individual's agency is constrained. The following discussion analyses the findings of Chapter 4 through the lens of this approach to justice, to evaluate whether UK oil and gas workers are experiencing a *Just Transition*. Notably, while this discussion focuses primarily on their pursuit of work and career goals, this discussion could also relate to their pursuit of also their pursuit of other goals, such as personal wellbeing, and maintaining good relationships with friends and family.

Workers' capability, or power, to pursue the work they value was interpreted as being reduced in the context of the UK's declining oil and gas industry. Their capability to pursue their chosen work goals was interpreted as being constrained in two ways.

Firstly, their capability to access alternative employment opportunities both within and beyond oil and gas was constrained. Capability to obtain work in oil and gas was constrained by the industry's cyclical nature, which limits workers' capability to access to work in oil and gas during industry downturns (particularly for those in the Aberdeen area). Capability to access work in the wider energy sector was constrained by the industry's status of decline, evolution and uncertainty. Although companies are increasingly evolving into holistic energy companies, workers are not being supported to obtain employment in other areas. Furthermore, delays to significant volumes of job creation in renewable energy was understood to reduce workers' capabilities identifying alternative careers, and working towards them. Further barriers of stigmatization and bureaucracy also reduce an individual's capability to access work in renewable energies.

Secondly, workers' capability to pursue their chosen work goals was interpreted as being potentially reduced by the negative mental health impact of job loss and unemployment. As illustrated in Chapter 4, The industry's endemic low job security; the stress of redundancies, which are common, and subsequent unemployment, which can last for an uncertain duration between days and years, they were understood to create stress and, therefore, to endanger mental health. Sen (2009) observes that individuals suffering reduced health may be limited in their capability to act. Similarly, as mental health was identified as a key resource enabling agency in the search for re-employment (section 5.3), a reduction in mental health as a result of industry conditions was understood to constrain one's capability to pursue re-employment.

Drawing on Sen's (2009) second pillar of justice, workers' freedom of choice over jobs and careers to pursue was also interpreted as being limited by structural features of UK oil and gas. Firstly, as oil and gas work offers high levels of pay, skill, pride, identity and challenge, many workers described not want to move from oil and gas. But they have to choose other options because of the employment context. Secondly, for unemployed workers with financial need, they were also forced into making a further choice in the short term: taking underemployment, below their skill level and not in line with their interests. Thirdly, various barriers to pursuing work in renewable energies also reduces freedom of choice for workers seeking to change into this growing area. The decline and evolution of the UK's oil and gas industry results in reduced choice over longer term career opportunities, forcing workers to pursue other career paths. In renewables, the lack of clarity over future job availability and skills requirements, reduces an individual's freedom to choose and work towards a career change to renewable energies.

Thus, drawing on Sen's (2009) conception of justice, the participants interviewed about their experiences of searching for re-employment after job loss can be evaluated as having suffered injustice. This is because they were judged to have their capability to pursue their personal goals, and their freedom of choice over those goals and how to pursue them, reduced. Notably, some workers were understood to be more at risk of injustice than others. As discussed in Section 5.3, a high degree of agentic resources are required to find re-employment after job loss during industry downturns. This means that those with low levels of the required resources – for example, few financial resources; a lack of social support; those who struggle to adopt a positive mindset – may struggle to act with agency during this difficult time. Even for those who have relatively high levels of the agentic resources, these resources can erode as time wears on. Therefore, those with reduced agentic resources were interpreted as having their capability to pursue their goals and was being at risk of injustice.

Given this evaluation of justice, the researcher's interpretation is that there is no real *Just Transition* for UK oil and gas workers yet. This is not for want of concern or effort. The industry stakeholders interviewed consistently expressed concern for the oil and gas workforce, recognised the need to support them in transitioning to the new, lower-carbon energy sector, and described various industry initiatives in support of this. However, drawing on Sen's (2009) approach, injustice was interpreted as having occurred in two ways. Firstly. workers' capability to pursue their work and life goals was reduced, via reduced access to employment, both within oil and gas and beyond it; and by the impact of low job security, job loss and unemployment on their mental health. Furthermore, their reduced options in the hostile employment context was interpreted as reducing their freedom of choice over their goals, and how to pursue them.

Instead, currently it is up to each individual to access re-employment success, requiring high levels of agentic resources, comprising health, psychological and practical elements. However, individuals with low levels of agentic resources are particularly at risk of not finding quality re-employment and, therefore, of not experiencing a *Just Transition*.

Supporting a Just Transition support for oil and gas workers

The literature on *Just Transition* interventions presented in Chapter 1 acknowledges that purposive, proactive action must be taken to protect job quantity and quality for displaced workers (White, 2020; Healy & Barry, 2017; Goddard & Farrelly, 2018; Pai et al., 2020; García-García et al., 2020). This field of literature is consistent in proposing that effective *Just Transition* policymaking should involve collaboration among the government, industry bodies and employers (Goddard & Farrelly, 2018; Krawchenko & Gordon, 2021). The three tenets of justice – distributive, procedural and restorative – introduced in Chapter 1 are used here to propose interventions promoting justice for UK oil and gas workers, based on the study's findings.

Firstly, distributive justice is concerned with identifying the spread of injustice as the net zero transition progresses (Carley & Konisky, 2020). As highlighted throughout this discussion, this study is the first to give voice to UK oil and gas workers about their experiences of finding work after job loss from this declining industry. The findings have helped to identify that this group is not yet experiencing a *Just Transition*, and that they need more support from government and industry. Thus, more social dialogue is needed between the oil and gas workforce as their industry continues to decline and evolve, as advocated for by various authors (Abraham, 2017; Chat et al., 2022; Galgoczi, 2020; Evans & Phelan, 2016; Harrahill & Douglas, 2019; Mayer, 2018; Oei et al., 2020; Goddard & Farrelly, 2018; Pai et al., 2020; Evans and Phelan, 2016; Johnson et al., 2013; Green & Gambhir, 2020; Pollin & Calacci, 2019).

Procedural justice in this context is concerned with ensuring that decisions are made, and processes undertaken, in a way that is fair to the UK oil and gas workforce (Carley & Konisky, 2020). The findings of this study highlight four courses of action that would be valuable to promote procedural justice for UK oil and gas workers. These proposed action points support, and supplement, procedural justice proposals made by previous authors.

Firstly, the findings of this study support the need for proactive policymaking that focuses on job quantity and quality, as recommended by various authors (Harrahill & Douglas, 2019; Afewerki & Karlsen, 2021; Krawchenko & Gordon, 2021; Healy & Barry, 2017; Goddard & Farrelly, 2018). Regarding job quantity, this would involve creating more clarity over the volumes of jobs in renewable energies, and other areas of clean energy production, in the future, to allow workers to plan career paths and reskilling efforts. Research by Robert Gordon's University (RGU ETI, 2021)

highlighting that most future offshore energy job availability will be in operations, technical roles, engineering and project work, published concurrently with data collection for the study, is a strong starting point. Therefore, this will involve clearer communication of the information and analysis that already exists. Regarding job quality, this study highlights the level of precarious work present in the UK oil and gas industry, due to its low job security. Therefore, policymaking should focus on promoting more stable working arrangements for this highly skilled group of workers.

Secondly, the findings of this study highlight an urgent need for industry-supported retraining and reskilling initiatives. The need for this has been widely identified widely in previous literature (Harrahill & Douglas, 2018; Krawchenko & Gordon, 2021; He et al., 2020; Green & Gambhir, 2020; Oei et al., 2020; Pollin & Calacci, 2019, Evans & Phelan, 2016; Sharpe & Martinez-Fernandez; 2021; Pai et al., 2020). This should involve collaboration by government, industry and education providers, as highlighted by various researchers (OPITO, 2019; Sooriyaarachi et al., 2015; Kuriyama & Abe, 2021; McQuaid & Bergmann, 2016).

Successful retraining support would not only support workers to access good quality replacement work but would also help the evolving energy sector to retain the oil and gas workforce's valuable human capital. In particular, some of the most highly skilled participants in this study - geoscientists who have highly specialised skills and expertise, often in one area of the North Sea may benefit from more tailored support and advice to help them transfer their skillset to other roles.

Thirdly, various authors advocate for the need for long-term planning, such as clear communication of phasing out plans to the workforce (Kuriyama & Abe, 2021; Galgoczi, 2020; Goddard & Farrelly, 2018; Pai et al., 2020; Evans & Phelan, 2016). The findings of this study confirm the value of long-term planning to support the oil and gas workforce as the energy sector evolves. In particular, the cyclical nature of UK oil and gas highlights the value of recommendations that phasing out oil and gas employment should be conducted gradually. Notification of declining job prospects should be given as early as possible to avoid a surplus of displaced workers on the job market at one time during industry downturns. However, the researcher also recognises that long-term planning for a *Just Transition* may be hindered by the industry's volatile economy.

Fourthly, industry action is also needed to tackle the stigmatization of oil and gas workers by renewable energies, and the bureaucracy faced by offshore workers who currently need to hold two sets of certificates for oil and gas and renewable energy installations, at their own cost. Action may involve promoting the transferable skillsets of oil and gas workers to renewable energy employers; and collaboration between industry bodies to help Addressing these barriers to re-employment would help oil and gas workers transition to work in lower carbon energy generation with more agility. No previous authors have identified the need for these interventions.

Finally, restorative justice is concerned with compensating individuals who have suffered injustice through job loss from UK oil and gas. Findings reiterate recommendations made by previous researchers, who have highlighted the need for economic and social support during unemployment. For example support with pension contributions, as well as financial support to reskill or relocate to other areas where work is more available, would both be valuable (Harrahill & Douglas, 2019; Green & Gambhir, 2020; Pollin & Calacci, 2019; Pai et al., 2020).

This financial support should be supplemented by social support to retrain and gain access to replacement work. This social support aligns with many of the procedural justice recommendations already made. As recommended by previous researchers, this would include support with retraining and reskilling initiatives, and accessing suitable re-employment opportunities, (Harrahill & Douglas, 2019; Krawchenko & Gordon, 2021; Green & Gambhir, 2020; Oei et al. 2020; Pollin & Calacci, 2019, Evans & Phelan, 2016; Sharpe & Martinez-Fernandez; 2021; Pai et al., 2020). Such support should be reactive, for those who have already lost jobs; as well as proactive, aiming to equip workers with the skills to adapt to a changing job market.

5.5 Concluding summary

In this chapter, the study's findings were discussed in relation to previous literature. The discussion was organised according to the study's two research questions. The first research question asked was, what structural factors influence access to re-employment success for workers displaced from the UK's oil and gas sector? Firstly, the impact of structure on the access to alternative employment opportunities was discussed (both within and beyond the UK's oil and gas industry). Novel findings regarding access to re-employment include the impact of the industry's cyclical nature on access to re-employment after job loss; the industry's evolving skills requirements; and the barriers to re-employment in renewable energies created by the lack of job creation, stigmatization of oil and gas workers, and bureaucracy between oil and gas and renewables installations.

The influence of the industry's low job security was then discussed. This was interpreted as influencing the search for re-employment by impacting mental health, which is a new contribution to oil and gas industry literature. Expanding on the issue of job security, the quality of re-employment obtained, and also work held prior to job loss was considered, and the inappropriateness of the 'decent work' construct was acknowledged. Instead, oil and gas workers experience precarious work, which again has an impact on mental health.

The discussion then turned to the second research question: in this context, what factors enable individuals to exercise agency in their search for re-employment? This discussion highlighted the novelty of a model of re-employment specific to the oil and gas industry, and focusing on the exercise of agency during re-employment, rather than obtaining a specific re-employment status. The identification of agentic resources

(health, coping and job search resources) and other factors (luck, time and demographics) was then compared and contrasted with previous literature.

Subsequently, the discussion addressed the overarching research aim of the study: to explore the reality of a *Just Transition* for UK oil and gas workers. This discussion was based on Sen's (2009) approach to justice. The researcher concluded that UK oil and gas workers are not yet experiencing a *Just Transition*, despite clear concern and existing efforts from the industry. This is because their capabilities to pursue their chosen work goals, and their freedom to decide what those goals are (Sen, 2009), are curtailed by the declining industry. Instead, workers must adapt their career plans and working arrangements to an evolving energy sector, or to seek work in other industries. The discussion of justice for UK oil and gas workers concluded with a discussion of the need for more tangible *Just Transition* interventions needed to support them, both proactively before job loss, and reactively afterwards.

The final Conclusion will propose implications and recommendations based on this discussion.

Conclusions and Recommendations

This conclusion begins by summarising the content of this thesis. It then highlights the study's empirical, theoretical and practical implications, and its limitations, and finally provides recommendations for further research based on the study's findings.

Summary of thesis context, literature and methodology

The study's Introduction presented the context of the UK's declining offshore oil and gas industry, and clarified the research problem addressed in this thesis. Following its inception in the late 1960s, and the rapid rise in industry activity for the remainder of the 20th century, employment has been declining since the peak of North Sea oil and gas production in 1999. This includes significant job losses caused by industry downturns in 2014 and 2020. Despite the continued predominance of North Sea oil and gas over the UK's energy mix for the coming decade, the downward trend in employment is forecast to continue as the industry declines in the long run. This raises the question of what the industry's decline means for its highly skilled oil and gas workforce. Promoting a fair, or 'just', transition for workers whose professional opportunities are disappearing has been the subject of much industry and government attention (e.g. Just Transition Commission, 2020a,b; TUC, 2019). However, the reality of a *Just Transition* for oil and gas workers, with continued access to quality replacement work as their industry declines, is not clear.

Thus, the overarching research aim was to understand the reality of a *Just Transition* for UK oil and gas workers. This research aim supports the need to help the highly skilled, valuable oil and gas workforce as the energy sector evolves. This in recognition of the importance of retaining valuable oil and gas human capital in the evolving energy sector; and the need to support the workforce in accessing alternative employment, a lesson learned from the UK's previous transition from coal to petroleum extraction (Johnson et al., 2013; Allen, 2012; Grubler, 2012).

Two research questions were addressed to achieve this aim. These research questions draw on the lens of structure and agency, to analyse the contextual and individual-level factors that influence UK oil and gas workers' search for re-employment after job loss. The two research questions addressed were:

1. What structural factors influence successful access to re-employment for workers displaced from the UK's offshore oil and gas sector?
2. What factors enable individuals to exercise agency when seeking re-employment in this context?

The first two chapters synthesised literature relevant to the research questions. Chapter 1 reviewed the academic literature on the *Just Transition*. It first presented an overview of the fast-growing, increasingly broad *Just Transition* construct. The study's approach to justice was introduced, drawing on Sen's (2009) capability approach, which focuses on individual capabilities and freedoms. As the UK oil and gas industry context may influence workers' capability and freedom to pursue their chosen

work goals, it was proposed that they may be subject to injustice, and therefore not experiencing a *Just Transition*. The chapter then focused on literature relevant to fossil fuel workers, including a small field of qualitative research giving voice to fossil fuel workers; and suggestions from policy literature on what interventions could promote a *Just Transition* for fossil fuel workers. The thesis set out to contribute to this field of literature by interviewing UK oil and gas workers about their experiences of finding replacement work after job loss as their industry declines. The chapter concluded by justifying the researcher's operationalisation of a *Just Transition* for workers displaced from the UK's oil and gas industry as re-employment success (Wanberg, 2012).

Chapter 2 introduced the lens of structure and agency used to understand the contextual barriers and opportunities of the UK oil and gas industry. An Archerian, morphogenetic approach to structure and agency was introduced and justified. This approach allowed the researcher to explore the structural features of UK oil and gas that influence the individual's experience of finding re-employment, and then to focus on exploring what it takes to act with agency within this context. Chapter 2 then presented a literature review analysing the structural and individual-level factors that may influence the process of finding replacement work after job loss from the UK oil and gas industry.

Chapter 3 described the methodology used to address the study's two research questions. A qualitative approach was adopted to explore these complex questions, drawing on a pragmatist philosophy that permitted the researcher to design the study based on the goal of social impact. Cross-sectional data were collected via 37 semi-structured interviews in total. 24 of these interviews were conducted with oil and gas workers with experience of seeking work after a job loss, either currently or previously. A further 13 interviews with industry stakeholders, who provided a different perspective on the industry context. Chapter 3 also provided an account of participant characteristics; an account of the interview dynamics experienced by the researcher; and the study's approach to data management and ethics.

Transcribed interview data were analysed using template analysis and abductive reasoning techniques. An initial coding template was devised using the findings of the literature review presented in Chapter 2, synthesising the contextual and individual level factors that might influence access to re-employment access and the exercise of agency. The template was then developed and iterated according to data, and the researcher's interpretation of this data. Once all interview transcripts had been analysed, abductive reasoning techniques were then applied to further iterate the findings. Findings from previous literature were reviewed to sense-check, and supplement, the study's results. Abductive reasoning also allowed the research to identify parts of the emerging results that were surprising or counter-intuitive, and required further thought and explanation. Finally, Chapter 3 concluded with a reflexivity statement in which the researcher reflect on her role in the study's design, data collection, analysis and write-up.

Research findings and response to Research Questions

In Chapter 4, findings of the process of analysis of data from the 37 participants interviewed were presented. Themes were presented and discussed in two main categories, according to the study's two research questions: structural factors influencing access to re-employment success, and factors influencing the exercise of agency by individuals in their job search. Analysis of each category was followed by a direct response to the study's two research questions, which is summarised here.

The first research question addressed was: '*What structural factors influence access to re-employment success for workers displaced from the UK's offshore oil and gas sector?*'. Three themes of findings related to this research question: the industry's characteristic cycles of boom and bust; the industry's current and future status of decline, evolution and uncertainty; and unique features of the industry culture. The researcher's interpretation was that there are two main ways in which these structural features influence access to re-employment success for workers who have lost their jobs: via practical access to employment; and via the potential impact of low job security on mental health.

Primarily, structural features of the UK oil and gas workers were understood to impact workers' access to replacement employment opportunities, both within and beyond oil and gas. The industry's cyclical, boom and bust nature was interpreted as having a strong influence on the job market, and therefore an individual's access to re-employment within oil and gas. While industry upturns create a buoyant job market, where the individual can exercise agency relatively easily in their job hunt, downturns are much more challenging, with fewer opportunities available. This pattern is particularly prevalent in Aberdeen, which has a high concentration of oil and gas employment.

The oil and gas industry's status of decline, evolution and uncertainty was interpreted as creating three main barriers to accessing work in renewable energies: lack of job creation, evolving skills requirements and barriers of stigma and bureaucracy. Although significant volumes of jobs in renewable energies are forecast to be created, these have largely not yet materialised, reducing opportunities available for oil and gas workers. Regarding human capital, there is a lack of clarity and communication regarding the energy sector's future skills requirements. This leaves workers at a disadvantage in seeking work opportunities that will enable them to build a sustainable career in the energy sector, as well as reducing their ability to pursue reskilling. Furthermore, some roles have more transferable skills than others; and various challenges to the idea that workers can easily reskill were presented. Further barriers to obtaining work in renewable energies were the stigmatisation of oil and gas workers by renewable energies employers for their association with polluting oil and gas production; and duplication of the certifications required to work on oil and gas and renewable energy offshore installations, a cost which is often borne by the individual.

Certain features of the oil and gas industry's unique culture were also understood to impact an individuals' access to re-employment, both within and beyond oil and gas. The highly networked nature of oil and gas, and the predominantly '*stale, male and pale*' workforce, were both understood to influence individuals' access to replacement work in oil and gas. The level of pride, challenge and identity provided by oil and gas work, particularly offshore work, was understood to reduce some individuals' motivation to seek work in other areas; while workers perceived that the highly paid nature of oil and gas work made them less attractive to employers in other industries.

Structural features of the UK oil and gas industry were also interpreted as influencing access to re-employment in a second way. The endemic low job security created by cycles of boom and bust was interpreted as creating stress for workers. This stress can be exacerbated by money worries for those who had not saved up for periods of unemployment. This was understood to potentially impact workers' mental health, which is an important asset in their search for re-employment. In the response to the second research question, summarised below, mental health is identified as a key resource enabling the individual to act with agency. Therefore, the industry's low job security was interpreted as reducing agency by putting mental health at risk; and thus constraining an individual's ability to access re-employment.

The second research question asked was: '*In this context, what factors enable individuals to exercise agency in their search for re-employment?*'

A range of agentic resources was interpreted as enabling the individual to act with agency in their search for re-employment after job loss from the UK's oil and gas industry. These resources were interpreted as being particularly important in the exercise of agency during industry downturns, when reduced job opportunities create a hostile employment context.

Good physical and mental health were analysed as being critical resources in the job search. Indeed, mental health was interpreted as being so important to the job seeker, and so much at risk after job loss and during unemployment, that managing the 'mental health spiral' was positioned as being the second goal of the re-employment process. Therefore, the researcher's interpretation was that acting with agency in the search for re-employment involves achieving two goals: the explicit goal of finding replacement work, and the hidden goal of managing the mental health spiral during a stressful time.

In addition to health resources, the researcher suggests that an individual needs to be equipped with 'coping' and 'job-search' resources. 'Coping resources', which comprise both psychological and practical resources, were interpreted as helping the individual to manage the mental health spiral. Psychological coping resources supporting the individual to manage the spiral were identified as tolerance of uncertainty, a positive mindset, a realistic locus of control, and a diversified identity. Practical coping resources were identified as social support and personal financial resources, both of

which were shown to reduce stress. Meanwhile, 'job-search' resources were interpreted as helping the individual to achieve the more explicit goal of finding re-employment. Psychological job-search resources identified as supporting the individual to achieve re-employment were resilience, self-efficacy, hope, and clear goals for re-employment, with the adaptability needed to change the goals or the process as necessary. Practical job-search resources identified as helping the individual to achieve re-employment were professional social networks, transferable human capital, proactive job-search behaviours, and individually-tailored external support. While transferable human capital is critical, findings revealed that some workers have more transferable skills that others; that embarking on education without practical work experience may not improve an individual's employability; and that the experience of reskilling involuntarily after a long and successful career in oil and gas can be challenging.

These health, coping and job-search resources were interpreted as supporting an individual to act with agency in their search for re-employment. Individuals with lower levels of these agentic resources were interpreted as struggling more to act with agency after job loss from the UK oil and gas industry.

However, exercising agency in a difficult employment context is not simply a case of building and leveraging a list of resources. Other factors out of an individual's control can influence their exercise of agency when seeking work after job loss from the UK oil and gas industry. Time can erode the health, coping and job-search resources necessary to act with agency, which diminish during the period of unemployment. A stroke of luck can end unemployment suddenly if the right opportunities come at the right time. Demographic characteristics described by participants as potentially hindering their job-search efforts included older age and ethnicity.

Chapter 4 concluded by presenting these findings in an explanatory model. The model is based on the metaphor of climbing a mountain range, inspired by a metaphor used by one participant to describe their experience of the search for re-employment. The model comprises two mountain peaks. The main peak represents achieving re-employment, which is the explicit goal for any job seeker. However, in order to get there, the individual must first climb a hidden peak of managing the mental health 'spiral', which is necessitated by the stress of job loss and unemployment. To act with agency in their search for re-employment, an individual must climb both peaks. In order to climb these mountains, agentic resources of health, coping and job-search resources are required. Structural features of the UK's oil and gas industry also influence the exercise of agency in this context, and are highlighted in grey. Time, luck and demographic characteristics were portrayed as weather, which can help or hinder the individual's journey up the mountains. Therefore, climbing both mountains, and acting with agency in the search for re-employment, may be easier for some individuals than for others.

In the discussion presented in Chapter 5, the researcher returned to the study's original research aim of understanding the reality of a *Just Transition* for UK oil and gas workers. Using Sen's (2009) individual capability-based approach to justice, she concluded that UK oil and gas workers facing job loss from this declining industry are not yet experiencing a *Just Transition*. This is not for want of concern or effort. The industry stakeholders interviewed consistently expressed concern for the oil and gas workforce, recognised the need to support them in transitioning to the new, lower-carbon energy sector, and described various industry initiatives in support of this. However, renewable energy job opportunities do not yet exist in large enough volumes to absorb displaced oil and gas workers; and there is no tangible support to help them overcome structural barriers, such as reskilling support and efforts to reduce stigmatisation and bureaucracy. Therefore, it is up to each individual to create a *Just Transition* for themselves, drawing on their agentic resources in their search for re-employment. Thus, individuals with low levels of the agentic resources were understood to be at a higher risk of not experiencing a *Just Transition*.

Contributions to empirical research

The study's findings were interpreted in relation to previous literature in Chapter 5. Based on this discussion, the key contributions of the study's findings to empirical research on the *Just Transition* for UK oil and gas workers are highlighted here. The study contributes new empirical knowledge to four topics relating to a *Just Transition* for UK oil and gas workers.

Firstly, the study contributes to empirical *Just Transition* literature by giving voice to UK offshore oil and gas workers about their experiences of finding re-employment after job loss. This follows the precedent of a small but growing field of empirical studies presenting interview data from fossil fuel workers about their views on the energy transition, and of *Just Transition* interventions (e.g. Olson-Hazboun, 2018; Graff et al., 2018; Banerjee & Schuitema, 2022; Cha et al., 2022; MacNeil & Beauman, 2022; Sicotte et al., 2022; Carley et al., 2018; Roden, 2021). However, this study is the first to give voice to this specific group, UK oil and gas workers, about their experiences of a *Just Transition*. It is also the first to interview workers about their practical experiences of finding re-employment, rather than about their perceptions of a *Just Transition* or related interventions.

Moreover, the study provides new knowledge to this field of research by providing a response to the study's overarching research aim. The study set out to understand whether there is a *Just Transition* for UK oil and gas workers. Based on Sen's (2009) approach to justice, the researcher concluded that there is not yet a *Just Transition* for UK oil and gas workers. This is due to of the reduction in workers' capability to achieve, and freedom to choose, their work goals after job loss from this declining industry. Indeed, it is up to individual workers to create a *Just Transition* for themselves, drawing on personal resources to help them act with agency in their search for re-employment; leaving individuals with low levels of agentic resources at greater risk of not experiencing a *Just*

Transition. This is a valuable contribution to UK industry and government publications reporting efforts to create a *Just Transition* for the oil and gas workforce (e.g. Just Transition Commission 2020 a,b; 2021; 2022). Various practical recommendations for industry and government to support a *Just Transition* for the UK's skilled oil and gas workforce are made later in this Conclusion.

Secondly, a key finding of the study was the impact of the cyclical nature of the UK oil and gas sector on the job market, and therefore on workers' exercise of agency in the search for re-employment. While the impact of economic cycles on oil and gas industry activity has been widely acknowledged, and some previous studies have documented the challenges of working in a cyclical industry (Mahdiani et al., 2021), this is the first study to explore the impact of the cyclical economy on UK oil and gas workers' experiences of accessing re-employment. Furthermore, following the precedent of authors who have advocated the need for geography-specific analyses of the impact of the energy transition (Sharma & Banerjee, 2021; Carley & Konisky, 2020; Carley et al., 2018; While & Eadson, 2021), this is the first study to highlight the impact on oil and gas workers in Aberdeen.

Relatedly, this cyclical economy has resulted in low job security throughout much of the UK oil and gas industry. This low job security was interpreted as creating a potential mental health risk health for many workers, particularly those with low levels of mental health or coping resources. The low job security of oil and gas industries globally has been fairly well documented in previous literature (Mackie, 2004; GETI, 2021; Milliken & Lindner, 2023); and various researchers have highlighted that the experience of job insecurity creates a risk for mental health across contexts (Allan, Autin et al., 2021; de Witte et al., 2016). However, this study is the first to highlight the potential mental health impact of low job security in the specific context of UK oil and gas.

Findings on low job security also provide new knowledge calling into question the relevance of the 'decent work' construct for UK oil and gas workers. A *Just Transition* for fossil fuel workers has been widely operationalised the access to 'decent work' (UNFCCC, 2015). However, prior to job loss, many workers describe insecure working arrangements; and many were happy to accept insecure forms of work when they found re-employment. As decent work is partly characterised by stability and security (Blustein et al., 2016), its relevance to efforts to create a *Just Transition* for UK oil and gas workers is therefore questionable. Indeed, many workers interviewed described the opposite of decent work both before and after job loss: precarious working arrangements, characterised by irregular work, economic insecurity and involuntary temporary work (Allan, Autin et al., 2021). Thus, these findings provide scepticism about the relevance of the decent work construct for UK oil and gas workers as the industry seeks to create a *Just Transition* for them.

Thirdly, findings revealed that the energy sector's evolving skills requirement impacts workers' access to replacement employment. The study's findings regarding human capital agree with various key points made by UK energy sector bodies. Oil and gas workers should be well positioned to supply

the UK's burgeoning renewable energy industries with the required human capital; transferable skills are critical to help workers adapt to the changing energy sector; and some degree of upskilling and reskilling will likely be necessary for many workers (RGU ETI, 2021; OPITO, 2018, 2019).

However, this study's findings adds important new knowledge about the reality of the human capital situation in UK oil and gas for its workforce. Firstly, not all workers possess transferable skills. Some of the most highly educated workers interviewed for this study, geoscientists, are struggling to access alternative employment, and need more support. Secondly, reskilling through education not a panacea: workers also need a degree of practical work experience to access alternative employment opportunities, which is often hard to access. Thirdly, reskilling narratives ignore the complexity of changing a career built over decades, which can be a distressing experience involving a significant identity change. Fourthly, the lack of clarity over future human capital requirements in the energy sector is reducing workers' ability to pursue sustainable work opportunities now, and to pursue reskilling initiatives in the future. While research has been published on this area (RGU ETI, 2021), the researcher concluded that this may need to be committed to by employers, or communicated more clearly to the workforce. Fifthly, many workers are taking on reskilling at their own cost, and the energy sector needs to provide them with more support in order to retain their valuable human capital. These five contributions add valuable nuance to existing narratives of transferable skills, and the need for workers to reskill and upskill in the energy transition.

A fourth empirical contribution made by the study's findings is the identification of barriers that reduce workers' access to jobs in renewable energies: low job creation, stigma and bureaucracy. Job availability in the evolving energy sector is limiting workers' access to replacement work in clean energy production. Consistent with ONS (2022) data, the forecast significant levels of job creation in renewable energies (BEIS & OGUK, 2021; RGU ETI, 2021; Allan, Connolly et al., 2021; Allan et al., 2020; Allan et al., 2014) have not yet materialised; and are not expected to until the late 2020s. Therefore, there are not enough jobs in the energy sector to retain displaced oil and gas workers during downturns. This reduces their agency in accessing re-employment, as significant volumes of alternative opportunities in the energy sector do not exist. This is the first empirical study to explore the reality of job availability for workers displaced from the UK's declining oil and gas industry; and to conceptualise this as influencing their ability to exercise agency in their search for work.

Meanwhile, neither stigmatization of oil and gas workers nor bureaucracy has been identified in previous literature as a barrier to transitioning from oil and gas to renewables. This is a valuable empirical finding that contrasts with oil and gas industry literature promoting the importance of equipping the workforce to work across all areas of the energy sector (e.g. OPITO, 2018; RGU ETI, 2021).

Contributions to theory

In addition to contributing to empirical research, the study's findings also contribute to theory on the process of finding re-employment after job loss.

The explanatory model proposed in Chapter 4 uses the analogy of mountain climbing to present a holistic, context-specific model of what it takes to act with agency after job loss from the UK's declining, cyclical offshore oil and gas industry. This contributes to literature proposing holistic models of individual-level factors that impact re-employment (e.g. Brouwer et al., 2015; Wanberg et al., 1999; McArdle et al., 2007; Solove et al., 2015; Vinokur & Schul, 2002; Thompson et al., 2017; Kanfer et al., 2001; van Hoye et al., 2015; Latack et al., 1995; van Hooft et al., 2021). The explanatory model makes a novel contribution to theory in three ways: its qualitative approach, which allowed the researcher to identify factors relevant to the individual's experience of finding re-employment; the study's focus on enablers of agency, rather than predictors of re-employment; and the specificity of findings to the unique context of UK oil and gas.

As explored in Chapter 5, literature on re-employment, vocational psychology, and agency contains the precedent for the value of each of the health, coping and job-search psychological resources identified during analysis. Some aspects (such as self-efficacy) are more robustly evidenced in the re-employment literature than others (such as tolerance of uncertainty), which were identified from interview data and were not presented in the literature review in Chapter 2. However, it is novel to conceptualise these factors holistically as working together to enable agency in the specific context of the UK upstream oil and gas industry and acknowledge the structural features that influence individual agency in this context.

Furthermore, the inclusion of mental health as foundational to the model, and its portrayal as a dynamic resource, makes a novel contribution to this area of theory. Mental health has seldom been integrated into theories and holistic models of individual-level factors influencing re-employability (e.g. Wanberg et al., 1999; McArdle et al., 2007; Solove et al., 2015; Thompson et al., 2017; Kanfer et al., 2001; van Hoye et al., 2015; Latack et al., 1995). This study follows the small precedent set by Vinokur & Schul (2002), and Van Hooft et al.'s (2021) meta-analysis, both of which highlight the role of mental health. However, the study is novel in portraying mental health as a dynamic resource that must be managed proactively during unemployment, rather than simply one variable that may influence re-employment outcomes.

Practical recommendations for industry bodies, policymakers and educators

There is a need for collaboration between industry, government and academia to create an effective *Just Transition* for oil and gas workers (OPITO, 2019). Therefore, the proposals are positioned here as recommendations to UK oil and gas industry bodies, policymakers, and educators. These

recommendations are based on the interventions proposed in Section 5.4 of Chapter 5, and relate to job quantity and quality; human capital; and tackling barriers preventing oil and gas workers from accessing work in renewable energies. The researcher urges industry stakeholders to conduct further research with the UK's oil and gas workforce, in order to evaluate the impact of interventions undertaken.

A first set of practical recommendations there is a need for more clarity over future job availability in the energy sector. This would enable workers to plan their future career paths and reskilling efforts; as well as identifying opportunities now that would set them up for a sustainable career in energy. Research by Robert Gordon's University (RGU ETI, 2021), published concurrently with data collection for the study, provides a good basis for this, clarifying that the greatest volumes of offshore energy jobs will be available in operations, technical roles, engineering and projects by 2030. Therefore, a strong starting point may involve clearer communication of this analysis to the workforce; and commitment to future job volumes, as far as possible, by employers. Further analysis, including an indication of availability employment numbers for other role types, would be of great value to the workforce.

Boosting clarity over future job availability would ideally also involve longer-term planning and communication of employment plans to the workforce, including the phasing out of oil and gas work as well as job creation in clean energy production. This would allow the workforce to make plans to repivot their career paths. However, the researcher recognises that the cyclicality of UK oil and gas may hinder the ability to commit to longer term plans.

Improved clarity to job quantity also raises the issue of improved job quality. As discussed throughout this thesis, UK oil and gas workers are subject to low job security due to the cyclical nature of industry activity. The researcher recognises that simply recommending that great job security be created as the energy sector evolves into more clean energy production would be an over-simplification. However, she urges stakeholders to take note of the stress and precarity of work experienced by many oil and gas workers as new energy jobs are created.

A second set of intervention recommendations focuses on supporting oil and gas workers to transfer their human capital to clean energy production. The collaboration between industry bodies, policymakers and educators is particularly important to enable workers to build the foundation for sustainable careers in the evolving energy sector. Five recommendations are made here.

Firstly, there needs to be more clarity over the skills required for future jobs, to allow people to embark on reskilling efforts. This is closely linked to the need to clarify future job availability, and will allow individuals to plan their careers more sustainably.

Secondly, there is a need for industry-supported retraining and reskilling initiatives: both reactively for individuals who have suffered job loss and proactively for those for whom job opportunities are declining. This support should involve both financial aid to retrain, and social support (e.g. communication of the value brought to clean energy production by oil and gas workers; and potentially alignment of module content with oil and gas skills).

Thirdly, there is a need to integrate an element of practical work experience, as far as is feasible, in reskilling programmes in lower carbon energy production, to increase candidates' employability. This is because the study's findings indicate that knowledge and qualifications alone are not enough to gain employment; employers are also looking for practical experience in clean energy production, even when candidates possess highly relevant practical oil and gas experience.

Fourthly, more support needs to be given to highly specialised workers whose skillset is not in demand during downturns, and who lack transferable skills. In this study, specialist geoscientists with technical roles, often associated with a specific area of the North Sea, were understood to have the least transferability to other roles during downturns.

Fifthly, industry bodies and policymakers are urged to recognise that narratives of reskilling and upskilling neglect the complexity of this experience for many workers. Workers who have led an oil and gas career built over decades, and whose identity is closely aligned with their career, may struggle to repivot their careers and to reskill. Awareness of the complexity of this process is important to better understand the situation some workers will find themselves in, and to support them as they assess options for their future careers in the energy sector.

A third set of practical recommendations is made, focusing on reducing the new barriers to oil and gas workers identified in this study. Firstly, the perceived stigmatisation of oil and gas workers is being experienced by some as a barrier to obtaining work in renewable energies. Thus, it is recommended that the energy sector engages in positive promotion of oil and gas workers, and the value of their skillsets, to renewable energy employers. Secondly, it is recommended that the energy sector create more synergy between offshore certificates required for oil and gas and renewable installations, therefore reducing cost burdens on unemployed workers. This would be a significant step in creating a workforce that can respond with agility to opportunities across the offshore energy sector.

Finally, although not a key finding of this study, the researcher notes that many participants described the stress caused by a lack of feedback or response to job applications during industry downturns. Therefore, it is recommended that oil and gas employers create a time-effective way to deliver some level of constructive feedback to unsuccessful applications; and at least to inform them that their applications have not been progressed.

Practical implications for workers and career practitioners

For individuals and career practitioners, the study's findings are intended to serve as sensemaking tools to support those experiencing job loss from UK oil and gas, and seeking re-employment. There are two main practical implications for individual workers, and those supporting them in their job search.

Firstly, the model's identification of two goals of the re-employment process – the hidden goal of managing the mental health spiral, and the explicit goal of finding replacement work – can be used to help workers to analyse and understand their experiences of seeking re-employment after job loss. This may help individuals to recognise the need to manage their mental health after job loss and during unemployment, even for those with good mental health; as well as engaging in a proactive job search. As the existence of the two goals of re-employment was interpreted to be relevant to other contexts, this finding may also be a sensemaking tool for individuals beyond the UK oil and gas industry.

Secondly, the model proposed in Chapter 4 provides a holistic overview of the health, coping, and job-search resources interpreted as enabling agency in the search for re-employment for workers made redundant from the UK offshore oil and gas sector. Workers may use this model as, effectively, a toolkit to identify the resources that they have, and those that they need to build, in order to exercise agency as they seek re-employment.

Both these points may also help career practitioners – for example, coaches or counsellors – to support the individual through the difficult experience of job loss and unemployment. Furthermore, the study's results provide career and re-employment practitioners with an awareness of the unique context surrounding workers displaced the UK's oil and gas sector, and the structural barriers they face in finding work. Such an understanding is critical in helping them overcome those challenges.

Reflection on the impact of Covid-19 on the study's results

The study was conceived and designed in early-mid 2020, and data collection took place from the autumn of 2020 until the summer of 2021. Thus, the study was designed and data collected concurrently with the beginning and peak of the global Covid-19 pandemic. The researcher believes that this is relevant to the study's design and data collection in four ways.

Firstly, the study's focus and research questions were influenced by the industry downturn caused by Covid-19. Before the spring of 2020, the researcher had intended to conduct a study on experiences of voluntary career changes from oil and gas to renewable energies. However, the oil and gas industry downturn triggered by the pandemic made it clear that the more pressing research topic was the experiences of workers made redundant from this declining industry who were seeking work again during a severe industry downturn.

Secondly, travel restrictions imposed by the pandemic influenced the study's data collection: it was not possible to meet participants in person, and all interviews were conducted virtually. The researcher believes that this made it easier to schedule interviews, as less time was required for a virtual meeting than an in-person interview due to reduced travel time, and the early pandemic was a time when most people were used to scheduling Zoom calls (The Guardian, 2021).

Thirdly, the economic repercussions of the pandemic had a strong influence on the job market during data collection. Covid-19 created a serious and unexpected downturn, with thousands of jobs lost and very few job opportunities available. However, although the impact was unprecedented, it was interpreted as an extreme example of the semi-regular economic downturns to which the UK's offshore oil and gas sector is accustomed. Therefore, the study's results were interpreted as being relevant to the industry in general, and not limited to Covid-19 as a unique experience for the sector. Interview participants were invited to share their experiences of job loss due to the 2020 downturn and previous downturns, and these were given equal importance during data analysis. Thus, despite the influence of Covid-19 on the job market at the time of data collection, the study's findings are not limited to the period of the pandemic.

Finally, the only element of the job search identified as being different due to the pandemic was the experience of networking. In this highly-networked industry, leveraging personal contacts and social networks is often critical to access job opportunities. During the Covid-19 pandemic, opportunities for face-to-face networking were curtailed completely and people were generally not in their offices or next to their phones to pick up calls from people seeking work. This was clarified in the findings presented in Chapter 4 and is not judged to have a material impact on the findings.

Limitations

The results of this study are potentially limited by four features of the study's methodology. These limitations are outlined briefly here, accompanied by a description of steps taken to mitigate them.

Firstly, the constraints of the study's pragmatist philosophy mean that findings are socially constructed by the researcher and by interview participants; and do not claim to represent an objective reality, as this cannot be accessed directly by human knowledge (Kaushik & Walsh, 2019; Whitehouse-Hart, 2012).

Secondly, the research design was cross-sectional, with interviews conducted at one time point only. A limitation of cross-sectional research is that it does not enable an analysis of change in each individual's narrative, as longitudinal research does (Pettigrew, 1990). This limitation was partly mitigated by the decision to interview people at a range of stages in their re-employment experiences. Data were collected from individuals who were unemployed at the time of the interview and seeking work, as well as from individuals who had already found work and were reflecting on their past

experiences. Thus, the inclusion of participants at different stages of the re-employment process enabled approximation of longitudinal research, albeit not at the intra-individual level.

Thirdly, the study involved participants from across the UK rather than from one specific region, as advocated by some authors (e.g. Sharma & Banerjee, 2021; Carley & Konisky, 2020; Carley et al., 2018; While & Eadson, 2021). This limitation is partly mitigated by the findings' acknowledgement of the central role played by Aberdeen in the UK's offshore oil and gas industry, and the high proportion of participants who had lived or worked there.

Fourthly, as described in Chapter 2, the researcher holds that that structure (in this case, the UK's oil and gas industry) precedes agency for the purpose of analysis. Thus, the model of 'acting with agency' is informed by the unique context of UK oil and gas. Therefore, the model of acting with agency after job loss presented Chapter 4 may not be transferable to contexts other than the UK oil and gas industry. This limitation was partly mitigated through clarification of which elements are context-specific, and which may be generalisable to other contexts. As described in the following section, further research in other contexts can help address this limitation.

Recommendations for future research

Based on the study's contributions to literature, six suggestions are made for future research to build on the findings of this study.

Firstly, further research should be conducted to boost the validity and rigour of the explanatory model introduced in Chapter 4 (Bamberger, 2019). A quantitative survey study, with optional open-text responses for participants to provide further information, would be valuable to explore the validity of the model with a larger population of UK oil and gas workers and stakeholders.

Secondly, future research to iterate and extend the model would be valuable. Valuable research would include longitudinal research to understand the trajectory of individual workers' experiences, and research exploring which elements of the model are transferable to other contexts. The first step in this may be to research how the model works in other declining extractive industries.

Thirdly, further qualitative research exploring the experience of work precarity for the highly skilled oil and gas workforce is recommended. This would make a valuable contribution to research on precarious work, which typically focuses on gig employment and lower-skilled work (Allan, Autin et al., 2021). This would also contribute to literature defining a *Just Transition* for fossil fuel workers as access to decent work.

Fourthly, the study's findings highlight nuances to the narratives of reskilling and upskilling present in many industry and government publications. Therefore, further research on the reality of transferring human capital from oil and gas to renewable energies is recommended. In particular,

qualitative research exploring the experiences of workers whose skillset is highly specialised (e.g. geoscientists focused on a specific area of the North Sea), and workers who have built an oil and gas career over decades and who are reluctant to transition their career to clean energy production, would be valuable. Such research would benefit both the individual workers, and the wider energy sector which needs to harness oil and gas human capital as it evolves into clean energy production.

Fifthly, further research on *Just Transition* interventions would be valuable. Survey research with the UK oil and gas sector's workforce and employers would be useful to further understand the kind of support needed by displaced workers, using data from a larger population. Research to evaluate the impact of any interventions carried out would also be valuable. Furthermore, action research on interventions tackling the contextual barriers to a *Just Transition* for UK oil and gas workers is also recommended. This would make a practical contribution to *Just Transition* efforts, and address the lack of evaluative research on the policies and actions that, in theory, could create more justice as net zero progresses.

A final recommendation is made regarding research supporting the industry's important goal of retaining oil and gas workers in the new energy sector (OPITO, 2018, 2019). The study's findings suggest that any significant transition of oil and gas workers to renewable energies is likely to happen during industry downturns, when there is a surplus of workers on the job market seeking alternative employment. However, without significant levels of job creation in renewable energies, as happened during the Covid-19 downturn of 2020, there is a risk that oil and gas workers will leave the energy sector entirely to pursue opportunities in other industries. Therefore, more explicit consideration of the oil and gas industry's cyclical nature – both as an opportunity and as a risk – may benefit research focusing on the transferability of oil and gas human capital to the evolving offshore energy sector (e.g. OPITO, 2018, 2019; RGU ETI, 2021).

The researcher hopes that the conclusions of this study, and these suggested future research directions, represent a meaningful contribution to *Just Transition* efforts for North Sea oil and gas workers. Ultimately, the researcher hopes that the conclusions of this study help to highlight and tackle the challenges faced by the highly skilled workforce of the UK's unique oil and gas sector as North Sea petroleum production declines; to clarify what can be done to help displaced workers find quality replacement work; and to support the individual in their search for re-employment after job loss.

References

Aberdeen & Grampian Chamber of Commerce (AGCC). (2022). *Oil and Gas Transition Survey: 34th edition*. Retrieved from: https://www.agcc.co.uk/files/Oil-and-gas-survey-KPMG-34-FINAL-online.pdf

Abraham, J. (2017). Just Transitions for the Miners: Labor Environmentalism in the Ruhr and Appalachian Coalfields, *New Political Science*, 39:2, 218-240, DOI: 10.1080/07393148.2017.1301313

Acheampong , T , Phimister , E & Kemp , A. (2021). ' An optimisation model for incentivising the development of marginal oil and gas fields amidst increasingly complex ownership patterns : UKCS case study ' , *Journal of Petroleum Science and Engineering* , vol. 207 , 109109 . https://doi.org/10.1016/j.petrol.2021.109109

Acheampong, T. & Kemp, A. (2022). Health, safety and environmental (HSE) regulation and outcomes in the offshore oil and gas industry: Performance review of trends in the United Kingdom Continental Shelf. *Safety Science*. Volume 148, 105634. DOI: https://doi.org/10.1016/j.ssci.2021.105634

Afewerki, S. & Karlsen, A. (2021): Policy mixes for just sustainable development in regions specialized in carbon-intensive industries: the case of two Norwegian petromaritime regions, *European Planning Studies*, DOI: 10.1080/09654313.2021.1941786

Akkermans, J., Seibert, S.E., & Mol, S.T. (2018). Tales of the unexpected: Integrating career shocks in the contemporary careers literature. *SA Journal of Industrial Psychology*/SA Tydskrif vir Bedryfsielkunde, 44(0), a1503. https://doi. org/10.4102/sajip.v44i0.1503

Alibasic, A., Upadhyay, H., Simsekler, M.C.E, Kurfess, T., Woon, W.K., & Omar M.A. (2022). Evaluation of the trends in jobs and skill-sets using data analytics: a case study. *Journal of Big Data*, 9:32 https://doi.org/10.1186/s40537-022-00576-5

Allan, B.A., Autin, K.L. & Wilkins-Yel, K.G. (2021). Precarious work in the 21st century: A psychological perspective. *Journal of Vocational Behavior***.** Volume 126. 103491. https://doi.org/10.1016/j.jvb.2020.103491

Allan, G. & Ross, A. (2019). The characteristics of energy employment in a system-wide context. *Energy Economics* 81, 238–258. DOI: 10.1016/j.eneco.2019.03.017

Allan, G., Comerford, D., Connolly, K., McGregor, P. & Ross, A.G. (2019). *Economic and Environmental Impacts of UK Offshore Wind Development to 2029 : the Importance of Local Content.* Discussion paper. *University of Strathclyde, Glasgow*. Retrieved from: https://strathprints.strath.ac.uk/69299/

Allan, G., Comerford, D., Connolly, K., McGregor, P. & Ross, A.G. (2020). The economic and environmental impacts of UK offshore wind development: The importance of local content. *Energy*. Volume 199, 117436. https://doi.org/10.1016/j.energy.2020.117436

Allan, G., Connolly, K., McGregor, P. & Ross, A. (2019). *Economic Activity Supported by Offshore Wind : a Hypothetical Extraction Study.* Discussion paper. University of Strathclyde, Glasgow. Retrieved from: https://strathprints.strath.ac.uk/69582/

Allan, G., Connolly, K., McGregor, P. & Ross, A. (2021). A new method to estimate the economic activity supported by offshore wind: A hypothetical extraction study for the United Kingdom. *Wind Energy*. 24:887–900.. https://doi.org/10.1002/we.2607

Allan, Lecca, McGregor & Swales (2014). The economic impacts of marine energy developments: A case study from Scotland. *Marine Policy* 43, 122–131

Allan, McGregor & Swales (2017). Greening regional development: employment in low-carbon and renewable energy activities. *REGIONAL STUDIES*, 51, 8, 1270–1280. DOI: 10.1080/00343404.2016.1205184

Allen, R. (2012). Backward into the future: The shift to coal and implications for the next energy transition. *Energy Policy*, 50, 17–23. DOI: 10.1016/j.enpol.2012.03.020

Allwood, G. (2020). Mainstreaming Gender and Climate Change to Achieve a Just Transition to a Climate-Neutral Europe. *Journal of Common Market Studies.* Volume 58. Annual Review. pp. 173–186. DOI: 10.1111/jcms.13082

Alvesson, M. & Kärreman, D. (2007). Constructing mystery: Empirical matters in theory development. Academy of Management Review, 32(4), 1265–81

Amato, C. Baldner, C. & Pierro, A. (2016). "Moving" to a job. The role of locomotion in job search and (Re)employment. *Personality and Individual Differences*. Volume 101, October 2016, Pages 62-69. https://doi.org/10.1016/j.paid.2016.05.060

Anaf, J., Baum, F., Newman, L., Ziersch, A. & Jolley, G. (2013). The interplay between structure and agency in shaping the mental health consequences of job loss. *BMC Public Health* 2013, 13:110 http://www.biomedcentral.com/1471-2458/13/110

Andersson, K. 2015 Predictors of re-employment: A question of attitude, behavior, or gender? *Scandinavian Journal of Psychology*, 2015, 56, 438–446. DOI: 10.1111/sjop.12218

Arapostathis, S., Carlsson-Hyslop, A. , Pearson, P.J.G., Thornton, J. , Gradillas, M., Laczay, S., & Wallis, S. (2013). Governing transitions: Cases and insights from two periods in the history of the UK gas industry. *Energy Policy*. Volume 52, January 2013, Pages 25-44. https://doi.org/10.1016/j.enpol.2012.08.016

Arcelay, I., Goti, A., Oyarbide-Zubillaga, A., Akyazi, T., Alberdi, E.; Garcia-Bringas, P. (2021). Definition of the Future Skills Needs of Job Profiles in the Renewable Energy Sector. *Energies*, 14, 2609. https://doi.org/10.3390/en140926

Archer, M.S. (1995). *Realist Social Theory: The Morphogenetic Approach*. Cambridge University Press: New York, NY, USA

Archer, M.S., (1982). *Morphogenesis versus structuration*. British Journal of Sociology, 33(4), 455–483

Armstrong-Stassen, M. (1994). Coping with transition: A study of layoff survivors. *Journal of Organizational Behavior*, 15, 597-621.

Austin, J.H. (1978). *Chase, Chance and Creativity: the Lucky Art of Novelty*. New York: Columbia University Press

Baffes, J., Kose, M.A., Ohnsorge, F. & Stocker, M. (2015). *The Great Plunge in Oil Prices: Causes, Consequences,and Policy Responses*. World Bank Group. Policy research note. PRN/15/01. Retrieved from: https://openknowledge.worldbank.org/handle/10986/23611

Bainton, N., Kemp, D., Lèbre, E., Owen, J.R. & Marston, G. (2021). The energy-extractives nexus and the just transition. *Sustainable Development*. 29:624–634 DOI: 10.1002/sd.2163

Balgová, M., Trenkle, S. Zimpelmann, C. & Pestel, N. (2022). Job search during a pandemic recession: Survey evidence from the Netherlands. *Labour Economics*. Volume 75, 102142. https://doi.org/10.1016/j.labeco.2022.102142

Bamberger, P. (2019). ON THE REPLICABILITY OF ABDUCTIVE RESEARCH IN MANAGEMENT AND ORGANIZATIONS: INTERNAL REPLICATION AND ITS

ALTERNATIVES. *Academy of Management Discoveries*, Vol. 5, No. 2, 103–108. https://doi.org/10.5465/amd.2019.0121

Bandura, A. (1977). Self-efficacy: Toward a Unifying Theory of Behavioral Change. *Psychological Review*, Vol. 84, No. 2, 191-215

Bandura, A. (2001). SOCIAL COGNITIVE THEORY: An Agentic Perspective. *Annu. Rev. Psychol.* 2001.52:1-26

Bandura, A. (2006). Towards a psychological perspective of human agency. *Handbook of Socialization Theory and Research.* Volume 1, Issue 2. https://doi.org/10.1111/j.1745-6916.2006.00011.x

Banerjee, A. & Schuitema, G. (2022). How just are just transition plans? Perceptions of decarbonisation and low-carbon energy transitions among peat workers in Ireland. *Energy Research & Social* Science 88, 102616. https://doi.org/10.1016/j.erss.2022.102616

Baran, J., Szpor, A., & Witajewski-Baltvilks, J. (2020). Low-carbon transition in a coal-producing country: A labour market perspective. *Energy Policy* Volume 147, 111878. https://doi.org/10.1016/j.enpol.2020.111878

Barley, S. (1990). Images of Imaging: Notes on Doing Longitudinal Field Work. *Organization Science*, Vol. 1(2)

Barnes, J. (2022). Divergent desires for the just transition in South Africa: An assemblage analysis. *Political Geography*. Volume 97. 102655. https://doi.org/10.1016/j.polgeo.2022.102655

Barry, J. (2019). Green republicanism and a 'Just Transition' from the tyranny of economic growth, *Critical Review of International Social and Political Philosophy*, DOI: 10.1080/13698230.2019.1698134

Baruah, B. (2017). Renewable inequity? Women's employment in clean energy in industrialized, emerging and developing economies. *Natural Resources Forum.* 41, pp 18–29 DOI: 10.1111/1477-8947.12105

Baruch, Y. & Vardi, Y. (2016). Fresh Look at the Dark Side of Contemporary Careers: Toward a Realistic Discourse. *British Journal of Management*, Vol. 27, 355–372. DOI: 10.1111/1467-8551.12107

Baumberg B (2016) The stigma of claiming benefits: A quantitative study. Journal of Social Policy 45: 181–199.

Beatty, C., Fothergill, S. & Gore, T. (2019). The State of the Coalfields 2019: Economic and social conditions in the former coalfields of England, Scotland and Wales. Centre for Regional Economic and Social Research, Sheffield Hallam University. DOI: 10.7190/cresr.2019.6676686343.

Beck, V. & Brook, P. (2020). Solidarities in and through Work in an Age of Extremes. *Work, Employment and Society.* Volume 34, Issue1, p. 3-17. https://doi.org/10.1177/0950017019881566

Becker, G. S. (1964) *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, New York/London: Columbia University Press.

Becker, G. S. (1993) *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education* (3rd ed), Chicago/London: The University of Chicago Press.

Behfar, K. & Okhuysen, G.A. (2018) Perspective—Discovery Within Validation Logic: Deliberately Surfacing, Complementing, and Substituting Abductive Reasoning in Hypothetico-Deductive Inquiry. *Organization Science* 29(2):323-340. https://doi.org/10.1287/orsc.2017.1193

Behrendt, P., Heuer, K. & Gëritz, A.S. (2021). The Effect of Career Counselor Behavior on Reemployment. *Journal of Career Development*. Vol. 48(5) 584–598. OI: 10.1177/0894845319880616

BEIS & OGUK (Department for Business, Energy, and Industrial Strategy and OGUK) (2021). *North Sea Transition Deal*. Retrieved from: https://www.gov.uk/government/publications/north-sea-transition-deal

BEIS & ONS (Department for Business, Energy, and Industrial Strategy & Office for National Statistics) (2021). *UK Energy in Brief 2021*. Retrieved from: https://www.gov.uk/government/statistics/uk-energy-in-brief-2021

BEIS (Department for Business, Energy, and Industrial Strategy) (2019). *Upstream oil and gas in the UK*. Retrieved from: https://www.gov.uk/government/publications/extractive-industries-transparency-initiative-payments-report-2018/upstream-oil-and-gas-in-the-uk

Benedict, M.E. & VanderHardt, P. (1997). Reemployment differences among dislocated and other workers. *The American Journal of Economics and Sociology*. Vol 57, Issue 1

Bergmann, E.A. (2014). What type of sustainable employment arises from sustainable energy development? in Larsen, C., Rand, S., Schmid, J. and Keil, R. (Eds), *Sustainable Economy and Sustainable Employment*, Rainer Hampp Verlag, Munich, pp. 151-161.

Blom, N. & Perelli-Harris, B. (2021). Temporal Dimensions of Unemployment and Relationship Happiness in the United Kingdom. *European Sociological Review*, Vol. 37, No. 2, 253–270 doi: 10.1093/esr/jcaa044

Blustein, D.L,., Olle, C., Connors-Kellgren, A. & Diamoni, A.J. (2016). Decent Work: A Psychological Perspective. *Frontiers in Psychology*, vol 7, 1-10. doi: 10.3389/fpsyg.2016.00407

Blustein, D.L., Lysova, E.I. & Duffy, R.D. (2022). Understanding Decent Work and Meaningful Work. *Annual Review of Organizational Psychology and Organizational* Behavior. 10:14.1–14.26. https://doi.org/10.1146/annurev-orgpsych-031921-024847

Bößner, S. (2020). The Role of German Regime Actors and Trade Unions in the Energy Transition: Agency and Power. In: Wood, G., Baker, K. (eds) *The Palgrave Handbook of Managing Fossil Fuels and Energy Transitions*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-28076-5_12

Boué, J.C. & Wright, P. (2010). A Requiem for the UK's Petroleum Fiscal Regime. In: *UK Energy Policy and the end of market fundamentalism* (2010). Eds: Ian Rutledge and Philip Wright. UK: Oxford University Press for the Oxford Institute for Energy Studies

Bourdieu, P. (1977). *Outline of a Theory of Practice*. Cambridge: Cambridge University Press

Braun, V., & Clarke, V. (2006) Using thematic analysis in psychology. Qualitative Research in Psychology, 3 (2). pp. 77-101. http://dx.doi.org/10.1191/1478088706qp063oa

Bray, R., Montero, A.M. & Ford, R. (2022). Skills deployment for a 'just' net zero energy transition. *Environmental Innovation and Societal Transitions*. Volume 42, Pages 395-410. https://doi.org/10.1016/j.eist.2022.02.002

Brinkmann, S (2013). *Qualitative interviewing*. UK: Oxford University Press

Brooks, McCluskey, Turley & King (2015) The Utility of Template Analysis in Qualitative Psychology Research, *Qualitative Research in Psychology*, 12:2, 202-222, DOI: 10.1080/14780887.2014.955224

Brouwer, S., Bakker, R.H. & Schellekens, J.M.H. (2015). Predictors for re-employment success in newly unemployed: A prospective cohort study. *Journal of Vocational Behavior* 89 (2015) 32–38. http://dx.doi.org/10.1016/j.jvb.2015.04.001

Brown, S.D. & Lent, R.W. (2016). Vocational Psychology: Agency, Equity, and Well-Being. *Annu. Rev. Psychol*. DOI: 10.1146/annurev-psych-122414-033237

Burgess, M. & Whitehead, M. (2020). Just Transitions, Poverty and Energy Consumption: Personal Carbon Accounts and Households in Poverty. *Energies* 2020, 13, 5953; doi:10.3390/en13225953

Byrne, (G.) (2017) Narrative inquiry and the problem of representation: 'giving voice', making meaning, *International Journal of Research & Method in Education*, 40:1, 36-52, DOI: 10.1080/1743727X.2015.1034097

Caliendo, M., Cobb-Clark, D.A., & Uhlendorff, A (2015). Locus of control and job search strategies. *The Review of Economics and Statistics*, Vol. 97, No. 1, pp. 88-103

Carley, S. & Konisky, D.M, (2020). The justice and equity implications of the clean energy transition. *Nature Energy*, 5, 569–577. https://doi.org/10.1038/s41560-020-0641-6

Carley, S., Evans, T.P. & Konisky, D.M. (2018). Adaptation, culture, and the energy transition in American coal country. *Energy Research & Social Science* 37, 133–139. http://dx.doi.org/10.1016/j.erss.2017.10.007

Carley, S., Evans, T.P., Graff, M. & Konisky, D.M. (2018). A framework for evaluating geographic disparities in energy transition vulnerability. *Nature Energy* 3, 621–627 https://doi.org/10.1038/s41560-018-0142-z

Carlier, B.E., Schuring, M., van Lenthe, F.J. & Burdorf, A. (2014). Influence of Health on Job search Behavior and Re-employment: The Role of Job search Cognitions and Coping Resources. *J Occup Rehabil* 24, 670–679. https://doi.org/10.1007/s10926-014-9499-4

Casciaro, T., Gino, F., & Kouchaki, M. (2014). The Contaminating Effects of Building Instrumental Ties: How Networking Can Make Us Feel Dirty. *Administrative Science Quarterly*, *59*(4), 705–735. https://doi.org/10.1177/0001839214554990

Cassell, C. (2010). Criteria for evaluating papers using qualitative research. *Journal of Occupational and Organisational Psychology*. Retrieved on 31st March 2017 from http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)2044-8325/homepage/qualitative_guidelines.htm

Castrejon-Campos, O., Aye, L. & Hui, F.K.P. (2020). Making policy mixes more robust: An integrative and interdisciplinary approach for clean energy transitions. *Energy Research & Social Science* 64, 101425. DOI: 10.1016/j.erss.2020.101425

CBI (2020). *Learning for life: Funding a world-class adult education system*. CBI. Retrieved from: https://www.cbi.org.uk/media/5723/learning-for-life-report.pdf

Cha, J.M., Stevis, D., Vachon, T.E., Price, V. & Brescia-Weiler, M. (2022). A Green New Deal for all: The centrality of a worker and community-led just transition in the US. *Political Geography*. Volume 95, May 2022, 102594. https://doi.org/10.1016/j.polgeo.2022.102594

Cha, J.M. & Pastor, M. (2022). Just transition: Framing, organizing, and power-building for decarbonization. *Energy Research & Social Science*, Volume 90, 102588. https://doi.org/10.1016/j.erss.2022.102588

Cha, J.M. (2020). A just transition for whom? Politics, contestation, and social identity in the disruption of coal in the Powder River Basin. *Energy Research & Social Science* 69. 101657. https://doi.org/10.1016/j.erss.2020.101657

Chapman, A.J., McLellan, B.C. & Tezuka, T. (2018). Prioritizing mitigation efforts considering co-benefits, equity and energy justice: Fossil fuel to renewable energy transition pathways. *Applied Energy*. Volume 219, pp187-198. https://doi.org/10.1016/j.apenergy.2018.03.054.

Chen, D.J.Q., & Lim, V.K.G. (2012). Strength in adversity: The influence of psychological capital on job search. *Journal of Organizational Behavior*. 33, 811–839. DOI: 10.1002/job.1814

Chen, G., Gully, S.M. & Eden, D. (2004). General self-efficacy and self-esteem: toward theoretical and empirical distinction between correlated self-evaluations. *Journal of Organizational Behavior*. 25, 375–395. DOI: 10.1002/job.251

Chen, Z., Marin, G., Popp , D. & Vona, F. (2020). Green Stimulus in a Post-pandemic Recovery: the Role of Skills for a Resilient Recovery. *Environmental and Resource Economics*. 76:901–911 https://doi.org/10.1007/s10640-020-00464-7

Choudhury, M.R. & Broman, C.L. (2016). A Review of the Recent Trends in the Relationship between Unemployment and Families. *Michigan Family Review*, 20(1), 7-14. DOI: 10.3998/mfr.4919087.0020.103

Colapietro (2009). A revised portrait of human agency. *European Journal of Pragmatism and American Philosophy*, I-1/2 |

Combe, C. (2014). A Sectorial Analysis of the Green Maritime Energy Industry in Scotland: Strategies and Frameworks for Development and Growth. *JOURNAL OF MARITIME RESEARCH*, 11 1, pp 73–80

Consoli, D., Marin, G., Marzucchi, A., Vona, F. (2016). Do green jobs differ from non-green jobs in terms of skills and human capital? *Research Policy* 45, 1046–1060. https://doi.org/10.1016/j.respol.2016.02.007

Costley, C., Elliot, G. & Gibbs, P. (2010). *Doing work-based research*. Sage Publications Ltd

Coy, D., Malekpour, S. & Saeri. A.K. (2022). From little things, big things grow: Facilitating community empowerment in the energy transformation. *Energy Research & Social Science*. Volume 84, 102353. https://doi.org/10.1016/j.erss.2021.102353

Creed, P. A., & Moore, K. (2006). Social Support, Social Undermining, and Coping in Underemployed and Unemployed Persons. *Journal of Applied Social Psychology*, *36*(2), 321–339. https://doi.org/10.1111/j.0021-9029.2006.00010.x

Creed, P.A., King, V., Hood, M. & Mackenzie, R. (2009). Goal Orientation, Self-Regulation Strategies, and Job-Seeking Intensity in Unemployed Adults. *Journal of Applied Psychology*. Vol. 94, No. 3, 806 – 813. DOI: 10.1037/a0015518

Creswell, J.W. and Clark, V.L.P. (2018). *Designing and Conducting Mixed Methods* Research, 3rd ed. Thousand Oaks: Sage Publications Inc

Crowe, J.A. & Li, R. (2020). Is the just transition socially accepted? Energy history, place, and support for coal and solar in Illinois, Texas, and Vermont. *Energy Research & Social Science*. Volume 59, 101309. https://doi.org/10.1016/j.erss.2019.101309

Daher, M., Olivares, H., Carré, D., Jaramillo, A., & Tomicic, A. (2017). Experience and meaning in qualitative research: a conceptual review and a methodological device proposal. Forum Qualitative Sozialforschung / Forum: Qualitative Social Research, 18(3), 1-24. https://doi.org/10.17169/fqs-18.3.2696

Dahling, J.J., Melloy, R. & Thompson, M.N. (2013). Financial Strain and Regional Unemployment as Barriers to Job Search Self-Efficacy: A Test of Social Cognitive Career Theory. *Journal of Counseling Psychology*. Vol. 60, No. 2, 210 –218. DOI: 10.1037/a0031492

De Battisti, F., Gilardi, S., Guglielmetti, C. & Siletti, E. (2016). Perceived employability and reemployment: Do job search strategies and psychological distress matter?. *Journal of Occupational and Organizational Psychology* (2016), 89, 813–833. DOI:10.1111/joop.12156

de Battisti, F., Gilardi, S., Siletti, E. & Solari, L. (2014). Employability and mental health in dismissed workers: the contribution of lay-off justice and participation in outplacement services. *Qual Quant*. 48:1305–1323 DOI 10.1007/s11135-013-9836-2

De Witte, H., Pienaar, J. & De Cuyper, N. (2016) Review of 30 years of longitudinal studies on the association between job insecurity and health and well-being: Is there causal evidence? *Australian Psychologist* 51(1): 18–31. DOI: 10.1111/ap.12176

DECC (Department of Energy and Climate Change) (2014). *Review of the Refining and Fuel Import Sectors in the UK*. Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/302172/Refining_and_fuel_imports_in_the_UK__FINAL_VERSION.pdf

Della Bosca, H. & Gillespie, J. (2018). The coal story: Generational coal mining communities and strategies of energy transition in Australia. *Energy Policy* 120, 734–740. https://doi.org/10.1016/j.enpol.2018.04.032

Denyer, K. & Tatiana S. Rowson (2022): "I've finally got my expression": the anchoring role of identity in changing from an organisation-based career to a protean career path. *British Journal of Guidance & Counselling*. DOI: 10.1080/03069885.2022.2045570

Denzin & Lincoln (1994). *Handbook of qualitative research*. Thousand Oaks. CA:Sage

Denzin, N. (2012). Triangulation 2.0. *Journal of Mixed Methods Research*, 6, 80-88. https://doi.org/10.1177/1558689812437186

Deranty. J-P. & MacMillan, C. (2012). The ILO's Decent Work Initiative: Suggestions for an Extension of the Notion of "Decent Work". *Journal of Social Psychology*, Vol 43 (4), 386-402. Doi: 10.1111/josp.12003

Di Fabio A and Maree JG (2016). Using a Transdisciplinary Interpretive Lens to Broaden Reflections on Alleviating Poverty and Promoting Decent Work. *Front. Psychol*. 7:503. doi: 10.3389/fpsyg.2016.00503

Di Ruggiero, Cohen, Cole & Forman (2015). Competing conceptualizations of decent work at the intersection of health, social and economic discourses. *Social Science & Medicine* 133, 120-127. http://dx.doi.org/10.1016/j.socscimed.2015.03.026

Dickey, H., Watson, V. & Zangelidis, A. (2011). Job satisfaction and quit intentions of offshore workers in the UK North Sea oil and gas industry. *Scottish Journal of Political Economy*, *58*(5), pp.607-633. DOI: 10.1111/j.1467-9485.2011.00561.x

Dobbins, T.. Plows, A. & Lloyd-Williams, H. (2014). 'Make do and mend' after redundancy at Anglesey Aluminium: critiquing human capital approaches to unemployment. *Work, employment and society*. Vol. 28(4) 515–532. DOI: 10.1177/0950017013491454

Dodd, V., Hooley, T. & Burke, C. (2019). Decent work in the UK: Context, conceptualization, and assessment. *Journal of Vocational Behavior* 112 (2019) 270–281. https://doi.org/10.1016/j.jvb.2019.04.002

Dominish, E., Briggs, C., Teske, S., & Mey, F. (2019). Just Transition: Employment Projections for the 2.0 °C and 1.5 °C Scenarios. In S. Teske (ed.), *Achieving the Paris Climate Agreement Goals*. https://doi.org/10.1007/978-3-030-05843-2_10

Draeger, R., Cunha, B.S.L., Müller-Casseres, E., Rochedo, P.R.R., Szklo, A., & Schaeffer, R. (2022). Stranded crude oil resources and just transition: Why do crude oil quality, climate ambitions and land-use emissions matter. *Energy*. Volume 255, 124451. https://doi.org/10.1016/j.energy.2022.124451

Duffy, R.D., Allan, England, Blustein, Autin, Douglass, Ferreira & Santos (2017). The Development and Initial Validation of the Decent Work Scale. *Journal of Counseling Psychology*, Vol. 64, No. 2, 206–221. http://dx.doi.org/10.1037/cou0000191

Duffy, R.D., Bott, E.M., Allan, B.A. & Torrey, C.L. (2013). Examining a Model of Life Satisfaction Among Unemployed Adults. *Journal of Counseling Psychology*. Vol. 60, No. 1, 53– 63. DOI: 10.1037/a0030771

Duffy, R.D.. Blustein, Diemer & Autin (2016). The Psychology of Working Theory. *Journal of Counseling Psychology*, Vol. 63, No. 2, 127–148. http://dx.doi.org/10.1037/cou0000140

Ebaugh, H. (1988). *Becoming an ex: The process of role exit*. University of Chicago Press.

Egdell, V. & Beck, V. (2020). A Capability Approach to Understand the Scarring Effects of Unemployment and Job Insecurity: Developing the Research Agenda. *Work, Employment and Society*. Vol. 34(5) 937–948. DOI: 10.1177/0950017020909042

Elder, G. H., Jr., & Johnson, M. K. (2002). The life course and aging: Challenges, lessons, and new directions. In: R. A. Settersten Jr. (Ed.),*Invitation to the life course: Toward new understandings of later life*(pp. 49–81). Amityville, NY: Baywood

Emirbayer, M. & Mische, A. (1998). What Is Agency? *American Journal of Sociology*, Vol. 103, No. 4, pp. 962-1023

Esteban, M., Leary, D., Zhang, Q. Utama, A., Tezuka, T. & Ishihara, K.N. (2011). Job retention in the British offshore sector through greening of the North Sea energy industry. *Energy Policy* 39, 1543–1551. doi:10.1016/j.enpol.2010.12.028

Evans, G. & Phelan, J. (2016). Transition to a post-carbon society: Linking environmental justice and just transition discourses, *Energy Policy*, 99, 329–339

Ezzy, D. (2000). Fate and Agency in Job Loss Narratives. *Qualitative Sociology*, Vol. 23, No. 1

Fairclough, N., Jessop, B. & Sayer, A. (2002). Critical realism and semiosis. *Alethia*, Vol 5, https://doi.org/10.1558/aleth.v5i1.2

Fankhaeser, F., Sehlleier, F. & Stern, N. (2008) Climate change, innovation and jobs, *Climate Policy*, 8:4, 421-429, DOI: 10.3763/ cpol.2008.0513

Fanning, T., Jones, J. & Munday, M. (2014). The regional employment returns from wave and tidal energy: A Welsh analysis. *Energy.* 76, 958-966. DOI: 10.1016/j.energy.2014.09.012

Feldman, D. C. 1996. The nature, antecedents and consequences of underemployment. *Journal of* Management, 22: 385-407. https://doi.org/10.1016/S0149-2063(96)90030-6

Financial Times (FT) (2022a). Boris Johnson to back more UK onshore wind farms to boost energy security. Retrieved from: https://www.ft.com/content/dd8b45a1-e4fc-47a1-8870-f9518b05a5b0

Financial Times (FT) (2022b). Autumn Statement: UK hits energy companies with new windfall taxes. Retrieved from: https://www.ft.com/content/d260cc63-e45c-4118-aab9-86ac39e92bfb

Financial Times (FT) (2022c). Oil companies hit out at UK's 'fiscally unstable and complex' regime. Retrieved from: https://www.ft.com/content/8e8e895f-881c-49ec-8ab0-dea3a46401b7

Financial Times (FT) (2023). What Big Oil's bumper profits mean for the energy transition. Retrieved from: https://www.ft.com/content/16f8800b-7300-42e0-a3c7-3400ed6c4fa5

Fischer, W., Hake, J., Kuckshinrichs, W., Schröder, T., & Venghaus, S. (2016). German energy policy and the way to sustainability: Five controversial issues in thedebate on the "Energiewende". *Energy*. Volume 115, Part 3, pp1580-1591. htts://doi.org/10.1016/j.energy.2016.05.069

Fleig-Palmer, M., Luthans, K.W., & Mandernach, B.J. (2009). Successful Reemployment through Resiliency Development. *Journal of Career Development*. 35; 228. DOI: 10.1177/0894845308327271

Fleming, P . (2017). The Human Capital Hoax: Work, Debt and Insecurity in the Era of Uberization. *Organization Studies*, 38(5), 691 –709. ps://doi.org/10.1177/0170840616686129

Fletcher, D. & Sarkar, M. (2013). Psychological Resilience A Review and Critique of Definitions, Concepts, and Theory. *European Psychologist*; Vol. 18(1):12–23 DOI: 10.1027/1016-9040/a000124

Fort, I., Jacquet, F. & Leroy, N. (2011). Self-efficacy, goals, and job search behaviors. *Career Development International,* Vol. 16 No. 5. pp. 469-481. DOI 10.1108/13620431111168886

Fouquet, R. (2009). A Brief History of Energy. In Eds (Evans, J. & Hunt, L.C). *International Handbook on the Economics of Energy*. Edward Elgar Publishing. https://doi.org/10.4337/9781849801997.00006

Fuchs, S. (2001). Beyond Agency. *Sociological Theory.* 19:1.

Furchtgott-Roth, D., 2012. The elusive and expensive green job. *Energy economics.* 34, S43–S52. http://dx.doi.org/10.1016/j.eneco.2012.08.034

Gabriel, Y., Gray, D.E. & Goregaokar, H. (2013). Job loss and its aftermath among managers and professionals: wounded, fragmented and flexible. *Work, employment and society.* 27(1) 56 – 72. DOI: 10.1177/0950017012460326

Galgoczi, B. (2020). Just transition on the ground: Challenges and opportunities for social dialogue. *European Journal of Industrial Relations*. Vol. 26(4) 367–382 DOI: 10.1177/0959680120951704

Galvin, B.M., Randel, A.E., Collins, B.J. & Johnson, R.E. (2018). Changing the focus of locus (of control): A targeted review of the locus of control literature and agenda for future research. *Journal of Organizational Behavior*. 9. pp820–833. https://doi.org/10.1002/job.2275.

Garces, P. (2021). Philosophical pragmatism, pragmatic agency, and the treatment of evidence in social work. *Qualitative Social Work* 0(0) 1–16. DOI: 10.1177/14733250211019102

García-García, P., Carpinteroa, O & Buendíab, L. (2020). Just energy transitions to low carbon economies: A review of the concept and its effects on labour and income. *Energy Research & Social Science*. Volume 70, 101664. https://doi.org/10.1016/j.erss.2020.101664

Gardiner, J., Stuart, M., MacKenzie, R., Forde, C., Greenwood, I. & Perrett, R. (2009). Redundancy as a critical life event: Moving on from the Welsh steel industry through career change. *Work, Employment and Society*. 23(3), pp727-745. Doi 10.1177/0950017009344917

Garrett-Peltier, H. (2017). Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model. *Economic Modelling* 61, 439–447. DOI: 10.1016/j.econmod.2016.11.012

Gatrell, C. (2009). Safeguarding subjects? A reflexive appraisal of researcher accountability in qualitative interviews. *Qualitative Research in Organizations and Management: An International Journal* Vol. 4 No. 2, pp. 110-122. DOI 10.1108/17465640910978382

Georgiou, K., Mittas, N., Mamalikidis, I., Mitropoulos, A. & Angelis, L. (2021). Analyzing the Roles and Competence Demand for Digitalization in the Oil and Gas 4.0 Era. *IEEE Access*. DOI: 10.1109/ACCESS.2021.3124909

Gerards, R. & Welter, R. (2022). Job search in the presence of a stressor: Does financial hardship change the effectiveness of job search?. *Journal of Economic Psychology*. Volume 90, 102508. https://doi.org/10.1016/j.joep.2022.102508

GETI (2021). *The Global Energy Talent Index Report 2021*. Global Energy Talent Index. Retrieved from: https://www.getireport.com/reports/2021/

Giddens A (1979). *Central Problems in Social Theory*. London: Macmillan/Berkeley: University of California Press

Giddens, A. (1984). *The Constitution of Society: Outline of the theory of structuration*. Berkeley and Los Angeles: University of California Press.

Ginexi, E.M., Howe, G.W. & Caplan, R.D. (2000). Depression and Control Beliefs in Relation to Reemployment: What Are the Directions of Effect?. *Journal of Occupational Health Psychology* 2000, Vol. 5, No. 3, 323-336. DOI: 10.1037//1076-8998.5.3.3233

Glaser, B. G. & Strauss, A. L. (1967). *The discovery of grounded theory strategies for qualitative research*. Aldine de Gruyter, New York.

Goddard .G. & Farrelly, M.A. (2018). Just transition management: Balancing just outcomes with just processes in Australian renewable energy transitions. *Applied Energy*. Volume 225, pp110-123. https://doi.org/10.1016/j.apenergy.2018.05.025

Gordon (2009). R.L. The Prospects for Coal in the Twenty-first Century. Evans, J. & Hunt, L.C. (eds). *International handbook on the Economics of Energy*. UK: Edward Elgar pp73-88

Graff, M., Carley, S. & Konisky, D.M. (2018). Stakeholder perceptions of the United States energy transition: Local-level dynamics and community responses to national politics and policy. *Energy Research & Social Science* 43, 144–157. https://doi.org/10.1016/j.erss.2018.05.017

Graneheim, U. H., Lindgren, B. M., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Education Today*, *56*(June), 29–34. https://doi.org/10.1016/j.nedt.2017.06.002

Gray, D. E. (2014a). Theoretical perspectives and research methodologies. In *Principles of Applied Research Methods (Eds: Jackson, D.J.R., McDowall, A., Mackenzie-Davey, K.., Whiting, R.)* London: SAGE, pp3-26

Gray, D. E. (2014b). Research ethics. In *Principles of Applied Research Methods (Eds: Jackson, D.J.R., McDowall, A., Mackenzie-Davey, K.., Whiting, R.)* London: SAGE, pp55-83

Greco, L. (2022). A just transition: Insights from the labour unions of a steel locality (Taranto, Italy). *Economic and Industrial Democracy*, 1–22. https://doi.org/10.1177/0143831X221111417

Green, F. & Gambhir, A. (2020) Transitional assistance policies for just, equitable and smooth low-carbon transitions: who, what and how?. *Climate Policy*. 20:8, 902-921, DOI: 10.1080/14693062.2019.1657379

Greenberg, P. (2018) Coal Waste, Socioeconomic Change, and Environmental Inequality in Appalachia: Implications for a Just Transition in Coal Country. *Society & Natural Resources*. 31:9, 995-1011, DOI: 10.1080/08941920.2018.1456593

Grubler, A. (2012). Energy transitions research: Insights and cautionary tales. *Energy Policy* 50, 8–16. DOI: 10.1016/j.enpol.2012.02.070

Grützmacher, L.S. & Schermuly, C.C. (2021). PSYCHOLOGICALLY EMPOWERED DURING THE JOB SEARCH: HOW EMPOWERING COUNSELING AFFECTS JOB SEARCH PROCESS QUALITY. *Consulting Psychology Journal: Practice and Research*. Vol. 73, No. 3, 251–270. https://doi.org/10.1037/cpb0000199

Gueye, M. (2022). Just transition: From words to practice. *IPPR Progressive Review*. Volume 28(4). https://doi.org/10.1111/newe.12280

Guillemin, M. & Heggen, K. (2009). Rapport and respect: negotiating ethical relations between researcher and participant. *Med Health Care and Philos*, 12:291–299 DOI 10.1007/s11019-008-9165-8

Hallqvist & Hyden (2014). End of journey, end of story? A longitudinal study of involuntary work transitions among laid-off workers. *Studies in Continuing Education*, (36), 2, 201-217

Hanto, J., Krawielicki, L., Krumm, A., Moskalenko, N., Loffler, K., Hauenstein, C. & Oei, P.Y.(2021). Effects of decarbonization on the energy system and related employment effects in South Africa. *Environmental Science & Policy*. Volume 124, pp73-84. https://doi.org/10.1016/j.envsci.2021.06.001

Harfmann, D. (2021) Environmental concern in a Wyoming coal town: contentious environmental problems in rural communities, *Environmental Sociology*, 7:4, 421-433, DOI: 10.1080/23251042.2021.1913021

Harrahill, K. & Douglas, O. (2019). Framework development for 'just transition' in coal producing jurisdictions, *Energy Policy*, 134, 110990. https://doi.org/10.1016/j.enpol.2019.110990

Haynes, K. (2006). A therapeutic journey? Reflections on the impact of research on researcher and participant. *Qualitative Research in Organizations and Management: An International Journal*, Vol. 1 No. 3, pp. 204-21

Healy, N. & Barry , J. (2017). Politicizing energy justice and energy system transitions: Fossil fuel divestment and a "just transition", *Energy Policy, 108, 451–459.* https://doi.org/10.1016/j.enpol.2017.06.014

Heffron, R.J. & McCauley, D. (2017). The concept of energy justice across the disciplines. *Energy Policy* 105, 658–667. https://doi.org/10.1016/j.enpol.2017.03.018

Heffron, R.J. & McCauley, D. (2022). The 'just transition' threat to our Energy and Climate 2030 targets. *Energy Policy*. Volume 165, 112949. https://doi.org/10.1016/j.enpol.2022.112949

Heim, I., Vigneau, A.C. & Kalyuzhnova, Y. (2022): Environmental and socio-economic policies in oil and gas regions: triple bottom line approach, *Regional Studies*, DOI: 10.1080/00343404.2022.2056589

Henry, M.S., Bazilian, M.D. & Markuson, C. (2020). Just transitions: Histories and futures in a post-COVID world. *Energy Research & Social Science*. Volume 68, 101668. https://doi.org/10.1016/j.erss.2020.101668

Hensvik, L., Le Brabantian, T. & Rathelot, R. (2021). Job search during the COVID-19 crisis. *Journal of Public Economics*. Volume 194, 104349. https://doi.org/10.1016/j.jpubeco.2020.104349

Heras, J. & Martin, M. (2020). Social issues in the energy transition: Effect on the design of the new power system. Applied Energy. Volume 278, 115654. https://doi.org/10.1016/j.apenergy.2020.115654

Herepath, A. (2014). In the Loop: A Realist Approach to Structure and Agency in the Practice of Strategy. Organization Studies 2014, Vol. 35(6) 857 –879. DOI: 10.1177/0170840613509918

Hillen, M.A., Gutheil, C.M., Strout, T.D. , Smets, E.M.A, & Han, P.K.J. (2017). Tolerance of uncertainty: Conceptual analysis, integrative model, and implications for healthcare. Social Science & Medicine. Volume 180, pp62-75. https://doi.org/10.1016/j.socscimed.2017.03.024

Hitlin, S. & Elder Jr, G.H.. (2007). "Agency: An Empirical Model of an Abstract Concept." Pp. 33–67 in Constructing Adulthood: Agency and Subjectivity in Adolescence and Adulthood, edited by Ross Macmillan. Amsterdam: JAI Press

Hitlin, S. & Johnson, M.K. (2015). Reconceptualizing Agency within the Life Course: The Power of Looking Ahead. *American Journal of Sociology*, Vol. 120, No. 5, pp. 1429-1472. doi: 10.1086/681216

HM Government (2019). *Industrial Strategy: Offshore Wind Sector Deal*. Retrieved from: https://www.gov.uk/government/publications/offshore-wind-sector-deal

HM Government (2022). *British Energy Security Strategy*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1069969/british-energy-security-strategy-web-accessible.pdf

HM Revenue & Customs (HMRC). (2022). *Statistics of government revenues from UK oil and gas production July 2022.* Retrieved from: https://www.gov.uk/government/statistics/government-revenues-from-uk-oil-and-gas-production--2/statistics-of-government-revenues-from-uk-oil-and-gas-production-july-2022

Holck. L. (2016). Spatially Embedded Inequality : Exploring Structure, Agency, and Ethnic Minority Strategies to Navigate Organizational Opportunity Structures. *Personnel Review*, Vol. 45, No. 4, p. 643-680. https://doi.org/10.1108/PR-08-2014-0182

Hollstein, B. (2015). Qualitative Approaches To Social Reality: the Search for Meaning In: John Scott & Peter J. Carrington (Eds.): *Sage Handbook of Social Network Analysis*. London/New Delhi: Sage

Holmes, B.H. & Werbel, J. (1992). Finding Work Following Job Loss: The Role of Coping Resources. *Journal of Employment Counselling*. Vol. 29. Pp22-29. https://doi.org/10.1002/j.2161-1920.1992.tb00148.x

Holstein, J. & Gubrium, J. (1995) *The Active Interview*. Thousand Oaks. Sage Publications.

Hopkins, P. (2008). The Skills Crisis in the Pipeline Sector of the Oil and Gas Business. Journal of Pipeline Engineering, Volume 7, Number 3. Retrieved from: https://penspen.com/wp-content/uploads/2014/09/skills-crisis.pdf

House of Commons Library (2022). *Insight: What were the outcomes of COP26?* Retrieved from: https://commonslibrary.parliament.uk/what-were-the-outcomes-of-cop26/#:~:text=The%20COP26%20international%20climate%20conference,degrees%20of%20warming%20within%20reach.

House of Commons Scottish Affairs Committee (2018). *Oral evidence: The Future of the Oil and Gas Industry, HC 996* [video]. Transcript retrieved from: https://data.parliament.uk/WrittenEvidence/CommitteeEvidence.svc/EvidenceDocument/Scottish%20Affairs/The%20future%20of%20the%20oil%20and%20gas%20industry/Oral/94616.html

Hoyer, P., & Steyaert, C. (2015). Narrative identity construction in times of career change: Taking note of unconscious desires. *Human Relations*, 68(12), 1837–1863. https://doi.org/10.1177/0018726715570383

Hulshof, I.L., Demerouti, P. & Le Blanc, E.M. (2019). A Job Search Demands-Resources Intervention Among the Unemployed: Effects on Well-Being, Job Search Behavior and Reemployment Chances. *Journal of Occupational Health Psychology*. Vol. 25, No. 1, 17–31. http://dx.doi.org/10.1037/ocp0000167

Hulshof, I.L., Demerouti, P. & Le Blanc, E.M. (2020). Reemployment Crafting: Proactively Shaping One's Job Search. *Journal of Applied Psychology*, Vol. 105, No. 1, 58–79.http://dx.doi.org/10.1037/apl0000419

Huw & Turnbull (2018). From horizontal to vertical labour governance: The International Labour Organization (ILO) and decent work in global supply chains. *Human Relations*, https://doi.org/10.1177/0018726717719994

Huy, Q. (2012). Improving the Odds of Publishing Inductive Qualitative Research in Premier Academic Journals. *The Journal of Applied Behavioral Science* 48(2) 282 –287, doi: 10.1177/0021886312438864

Ibarra, H. (2007). Identity transitions: Possible Selves, liminality and the dynamics of voluntary career change. *INSEAD Working Papers Collection*, 31, 1–54. INSEAD, Paris. http://search.ebscohost.com/login.aspx?direct = true&db = bth&AN = 27480658&site = bsi-live

IEA (International Energy Agency) (2019). *Energy Policies of IEA countries: UK 2019 edition*. IEA, Paris, Retrieved from: https://webstore.iea.org/energy-policies-of-iea-countries-united-kingdom-2019-review

IEA (International Energy Agency) (2020). *Global energy review 2020*. IEA, Paris. Retrieved from: https://www.iea.org/reports/global-energy-review-2020

IEA (International Energy Agency) (2022). *World Energy Outlook 2022*. IEA, Paris. Retrieved from: https://www.iea.org/reports/world-energy-outlook-2022

ILO (International Labor Organization) (2015). Guidelines for a just transition towards environmentally sustainable economies and societies for all. Retrieved from: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf

Jackson, P.R. & Warr, P.B. (1984). Unemployment and psychological ill-health: the moderating role of duration and age. *Psychological Medicine*, 1984, 14, 605-614

Jacob. S.A. & Fergerson, S.P. (2012). Writing Interview Protocols and Conducting Interviews: Tips for Students New to the Field of Qualitative Research. *The Qualitative Report*. Volume 17, T&L Art. 6, 1-10. DOI: 10.46743/2160-3715/2012.1718

Jagger, N., Foxon, T., & Gouldson, A. (2013). Skills constraints and the low carbon transition. *Climate Policy* 13 (1), 43–57. https://doi.org/10.1080/14693062.2012.709079

Jahoda, M. (1982), *Employment and Unemployment*, Cambridge University Press, Cambridge

Janikowska, O.; Kulczycka, J. (2021). Just Transition as a Tool for Preventing Energy Poverty among Women in Mining Areas—A Case Study of the Silesia Region, Poland. *Energies*, 14, 3372. https://doi.org/10.3390/en14123372

Jenkins, K., McCauley, D.A., Heffron, R., Stephan, H. & Rehner, R. (2016) Energy Justice: A Conceptual Review. *Energy Research & Social Science*, 11, pp. 174-182. DOI: 10.1016/j.erss.2015.10.004

Jessop, B (2005). Critical realism and the strategic-relational approach. *New Formations* 56, 40-53

Johnson, K., Kerr, S., & Side, J. (2013). Marine renewables and coastal communities—Experiences from the offshore oil industry in the 1970s and their relevance to marine renewables in the 2010s. *Marine Policy* 38, 491–499. DOI: 10.1016/j.marpol.2012.08.004

Johnson, R. E., Rosen, C. C., Chang, C.-H. & Lin, S.-H. (J.). (2015). Getting to the core of locus of control: Is it an evaluation of the self or the environment? *Journal of Applied Psychology, 100*(5), 1568–1578. https://doi.org/10.1037/apl0000011

Johnson, R. E., Rosen, C. C., Chang, C.-H., & Lin, S. (2016). Assessing the status of locus of control as an indicator of core self-evaluations. *Personality and Individual Differences*. 90, 155–162. https://doi.org/10.1016/j.paid.2015.11.002

Johnstone, P. & Hielscher, S. (2017). Phasing out coal, sustaining coal communities? Living with technological decline insustainability pathways. *The Extractive Industries and Society*, 4, 457–461. http://dx.doi.org/10.1016/j.exis.2017.06.002

Jolkkonen, A., Koistinen, P. & Kurvinen, A. (2012). Reemployment of Displaced Workers – The Case of a Plant Closing on a Remote Region in Finland. *Nordic Journal of Working Life Studies*. Vol 2 issue 1. DOI 10.19154/njwls.v2i1.2353

Jolkkonen, A., Koistinen, P., Kurvinen, A., Lipainen, L., Nummi, T. & Virtanen, P. (2017). Time of Displacement as a Predictor of Re-employment. *Nordic journal of working life studies*. Vol 7 no 2.

Just Stop Oil (2022). *Campaign Background*. Retrieved from: https://juststopoil.org/background/

Just Transition Commission (2020a). *Just Transition Commission Interim Report*. Scottish Government. Retrieved from: https://www.webarchive.org.uk/wayback/archive/20210529112742/https://www.gov.scot/publications/transition-commission-interim-report/

Just Transition Commission (2020b) *Advice on a green recovery*. Scottish Government. Retrieved from: https://www.gov.scot/publications/transition-commission-advice-green-recovery/

Just Transition Commission (2021).*Just Transition Commission. A national mission for a fairer, greener Scotland*. The Scottish Government. Retrieved from https://www.gov.scot/publications/transition-commission-national-mission-fairer-greener-scotland/documents/

Just Transition Commission. (2022). *Making the Future: Initial Report of the 2nd Just Transition Commission*. The Scottish Government. Retrieved from: https://www.gov.scot/publications/making-future-initial-report-2nd-transition-commission/

Kalt, T. (2021): Jobs vs. climate justice? Contentious narratives of labor and climate movements in the coal transition in Germany, *Environmental Politics*, DOI: 10.1080/09644016.2021.1892979

Kanfer, R., Wanberg, C.R., Kantrowitz, T.M. (2001). Job search and employment: a personality-motivational analysis and meta-analytic review. *J. Appl. Psychol*. 86:837–55.

Kaufman, A. (2012). Theories of Distributive Justice. In Chadwick, C (Ed.), *Encyclopedia of Applied Ethics (Second Edition)*, pp842-850. Retrieved from: https://www.sciencedirect.com/topics/social-sciences/distributive-justice. https://doi.org/10.1016/B978-0-12-373932-2.00227-1

Kaushik, V. & Walsh, C.A. (2019). Pragmatism as a Research Paradigm and Its Implications for Social Work Research. *Social Sciences*, 8, 255; doi:10.3390/socsci8090255

Kelly, J.A., Clinch, J.P., Kelleher, L. & Shahab, S. (2020). Enabling a just transition: A composite indicator for assessing home-heating energy-poverty risk and the impact of environmental

policy measures. *Energy Polic*y. Volume 146, 111791. https://doi.org/10.1016/j.enpol.2020.111791

Kemp, A. & Kasim, S. (2006). A regional model of oil and gas exploration in the UKCS. *Scottish Journal of Political Economy*, Vol. 53, No. 2. https://doi.org/10.1111/j.1467-9485.2006.00376.x

Kemp, A.G. & Stephen, L. (2017). Can Long Term Activity in the UK Continental Shelf (UKCS) Really be Transformed? *University of Aberdeen North Sea Paper Series*. 139. Retrieved from: https://www.abdn.ac.uk/research/acreef/working-papers/

Kemp, A.G. & Stephen, L. (2019).Prospects for Activity in the UK Continental Shelf: the late 2019 Perspective. North Sea Occasional Paper No. 145. *Aberdeen Centre for Research in Energy Economics and Finance (ACREEF)*. Retrieved from: https://www.abdn.ac.uk/business/documents/NSP-145.pdf

Kemp, A.G. (2012). *The Official History of North Sea Oil and Gas : Vol. I: the Growing Dominance of the State*. UK: Routledge

Kemp, A.G. (2019). The Future of the UK Oil and Gas Industry. Written evidence for House of Commons Scottish Affairs Committee: The future of the oil and gas industry. Sixth Report of Session 2017–19. Retrieved from: http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/scottish-affairs-committee/the-future-of-the-oil-and-gas-industry/written/85995.html

Kim, J. G., Kim, H.J. & Lee, K. (2019). Understanding behavioral job search self-efficacy through the social cognitive lens: A meta-analytic review. Journal of Vocational Behavior. Volume 112, Pages 17-34. https://doi.org/10.1016/j.jvb.2019.01.004

Kim, S.T. & Choi, B. (2019). Price risk management and capital structure of oil and gas project companies: Difference between upstream and downstream industries. *Energy Economics*. Volume 83, Pages 361-374. https://doi.org/10.1016/j.eneco.2019.07.008

King, A. (2010). The odd couple: Margaret Archer, Anthony Giddens and British social theory. *The British Journal of Sociology*

King, Brooks & Tabari (2018). Template Analysis in Business and Management Research. *In Qualitative Methodologies in Organization Studies Volume II: Methods and Possibilities.* Ed Ciesielska, M. & Jemielniak, pp179-206. D. Palgrave MacMillan

King, N. (2004) Using templates in the thematic analysis of text, in C.Cassell and G.Symon (Eds.) *Essential Guide to Qualitative Methods in Organizational Research*. London: Sage

King, Z. (2004b). Career self-management: Its nature, causes and consequences. *Journal of Vocational Behavior* 65. 112–133. doi:10.1016/S0001-8791(03)00052-6

Kinicki, A.J., Prussia, G.E. & McKee-Ryan, F.M. (2000). A Panel Study of Coping with Involuntary Job Loss. *The Academy of Management Journal*. Vol. 43, No. 1. pp. 90-100.

Kira, M. & Klehe, U.C. (2016). Self-definition threats and potential for growth among mature-aged job-loss victims. *Human Resource Management Review*. Volume 26, Issue 3, Pages 242-259. https://doi.org/10.1016/j.hrmr.2016.03.001

Koen, J., Klehe, U-C. & Van Vianen, A.E.M. (2013). Employability among the long-term unemployed: A futile quest or worth the effort? *Journal of Vocational Behavior*. Volume 82, Issue 1, Pages 37-48, https://doi.org/10.1016/j.jvb.2012.11.001

Koen, J., Klehe, U-C. Van Vianen, A.E.M., Zikic, J., & Nauta, A. (2010). Job search strategies and reemployment quality The impact of career adaptability. *Journal of Vocational Behavior.* Volume 77, Issue 1, August 2010, Pages 126-139. https://doi.org/10.1016/j.jvb.2010.02.004

Kolde & Wagner (2022). Governance Policies for a “Just Transition” – A Case Study in the Rhineland Lignite Mining District. *Journal of Sustainable Development of Energy, Water and Environment Systems*. Volume10, Issue 1, 1080383. https://doi.org/10.13044/j.sdewes.d8.0383

Korkmaz, H. & Güloğlu, B. (2021). The role of uncertainty tolerance and meaning in life on depression and anxiety throughout Covid-19 pandemic. *Personality and Individual Differences*. 179, 110952. https://doi.org/10.1016/j.paid.2021.110952

Körner, A., Lechner, C.M, Pavlova, M.K. & Silbereisena, R.K. (2015). Goal engagement in coping with occupational uncertainty predicts favorable career-related outcomes. *Journal of Vocational Behavior*. Volume 88, June 2015, Pages 174-184. https://doi.org/10.1016/j.jvb.2015.03.001

Krawchenko, T.A. & Gordon, M. (2021). How Do We Manage a Just Transition? A Comparative Review of National and Regional Just Transition Initiatives. *Sustainabili*ty, 13, 6070. https://doi.org/10.3390/ su13116070

Krawchenko, T.A. & Gordon, M. (2022). Just Transitions for Oil and Gas Regions and the Role of Regional Development Policies. Energies, 15, 4834. https://doi.org/10.3390/ en15134834

Kuhn, T. (1962). The Structure of Scientific Revolutions. Chicago: University of Chicago Press

Kuriyama, A. & Abe, N. (2021). Decarbonisation of the power sector to engender a ‘Just transition’ in Japan: Quantifying local employment impacts. *Renewable and Sustainable Energy Reviews*. Volume 137, March 2021, 110610. https://doi.org/10.1016/j.rser.2020.110610

Kvale, S. & Brinkmann, S. (2008). *Interviews: Learning the Craft of Qualitative Research Interviewing.* (2nd ed.). Thousand Oaks, CA: Sage.

Kvale. S (2007). *Doing interviews*. London : SAGE. DOI: 10.4135/9781849208963

Lai , J.C.L, & Wong, W.S (1998). Optimism and Coping with Unemployment among Hong Kong Chinese Women. *Journal of Research in Personality*. 32, 454–479

Lambert, R.J. & Silva, P.P. (2012). The challenges of determining the employment effects of renewable energy. *Renewable and Sustainable Energy Reviews* 16, 4667–4674. DOI: 10.1016/j.rser.2012.03.072

Langley, A (1999). Strategies for theorizing from process data. *The Academy of Management Review*, Vol. 24, No. 4, pp. 691-710

Lassus, L.A., Lopez, S. & Rosigno, V.J. (2015). Aging workers and the experience of job loss. *Research in Social Stratification and Mobility,* 41, 81–91. http://dx.doi.org/10.1016/j.rssm.2015.01.001

Latack, J. C., Kinicki, A. J., & Prussia, G. E. (1995). An integrative process model of coping with job loss. *Academy of Management Review*, 20, 311–342

Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer Publishing Company, Inc

Leana, C. R., & Feldman, D. C. (1995). Finding New Jobs After a Plant Closing: Antecedents and Outcomes of the Occurrence and Quality of Reemployment. *Human Relations*, Vol 48, issue 12. Pp 1381-1401

Leana, C. R., Feldman, D. C. (1992). *Coping with job loss*. New York: Lexington Books

Leana, C. R., Feldman, D. C., & Tan, G. Y. (1998). Predictors of coping behavior after a layoff. *Journal of Organizational Behavior*, 19, 85–97

Leitch, A., Haley, B. & Hastings-Simon, S. (2019). Can the oil and gas sector enable geothermal technologies? Socio-technical opportunities and complementarity failures in Alberta, Canada. *Energy Policy* 125, 384–395. DOI: 10.1016/j.enpol.2018.10.046

Lent, R. W., & Brown, S. D. (2013). Social cognitive model of career self-management: Toward a unifyingview of adaptive career behavior across the life span. *Journal of Counseling Psychology*,60, 557–568. doi:10.1037/a0033446

Lent, R. W., Brown, S., & Hackett, G. (1994). Toward a unifying social cognitive theory of career andacademic interest, choice, and performance.Journal of Vocational Behavior,45, 79–122. doi:10.1006/jvbe.1994.1027Lent, R. W., Brow

Li, F.G.N., Pye, S. & Strachan, N. (2016) Regional winners and losers in future UK energy system transitions. *Energy Strategy Reviews* 13-14, 11-31. https://doi.org/10.1016/j.esr.2016.08.002

Li, Y. & Heath, A. (2020). Persisting disadvantages: a study of labour market dynamics of ethnic unemployment and earnings in the UK (2009–2015). Journal of Ethnic and Migration Studies. Vol. 46, No. 5, 857–878 https://doi.org/10.1080/1369183X.2018.1539241

Lim, R.H., Lent, R.W. & Penn, L.T. (2016). Prediction of Job Search Intentions and Behaviors: Testing the Social Cognitive Model of Career Self-Management. *Journal of Counseling Psychology*. Vol. 63, No. 5, 594 – 603. DOI: 10.1037/cou0000154

Lin, N. (2001). *Social Capital: A Theory of Social Structure and Action*. UK: Cambridge University Press

Lindsley, D.H, Brass , D.J. & Thomas, J.B. (1995). Efficacy-performance spirals: a multilevel perspective. *Academic of Management Review*, Vol 20, No 5, pp645-678.

Liu, S., Huang, J. L., & Wang, M. (2014). Effectiveness of job search interventions: A meta-analytic review. *Psychological Bulletin, 140*(4), 1009–1041. https://doi.org/10.1037/a0035923

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist, 57*(9), 705–717. https://doi.org/10.1037/0003-066X.57.9.705

Louie, E. & Pearce, J. (2016). Retraining investment for U.S. transition from coal to solar photovoltaic employment. *Energy Economics*, 57, pp.295-302. ff10.1016/j.eneco.2016.05.016ff. ffhal02113504f

Luthans, F. & Youssef-Morgan, C.M. (2017). Psychological Capital: An Evidence-Based Positive Approach. *Annu. Rev. Organ. Psychol. Organ. Behav*. 4:339–66 https://doi.org/10.1146/annurev-orgpsych-032516-113324

Luthans, F., Youssef-Morgan, C. M., & Avolio, B. (2007).*Psychological capital: Developing the human competitive edge.* New York,NY: Oxford University Press

Luthans, F.; Luthans, K.W. & Luthans, B.C. (2004) Positive psychological capital: Beyond human and social capital. *Bus. Horiz.* 2004, 47, 45–50. https://doi.org/10.1016/j.bushor.2003.11.007

Mackie, 2004. *The Oilmen: the North Sea Tigers*. Edinburgh: Berlinn Press

MacNeil, R. & Beauman, M. (2022). Understanding resistance to just transition ideas in Australian coal communities. *Environmental Innovation and Societal Transitions* 43 (2022) 118–126. https://doi.org/10.1016/j.eist.2022.03.007

Mahdiani, H., Höltge, J., Theron, L & Ungar, M. (2021). Resilience in Times of Economic Boom and Bust: A Narrative Study of a Rural Population Dependent upon the Oil and Gas Industry. *Journal of Adult Development*. 28:149–161 https://doi.org/10.1007/s10804-020-09363-z

Mallinckrodt, B. & Fretz, B.R. (1988). Social Support and the Impact of Job Loss on Older Professionals. *Journal of Counseling Psychology*. Vol. 35, No. 3, 281-286

Mason, J. (1996). *Qualitative researching*. London: Sage

Mayer (2018). A just transition for coal miners? Community identity and support from local policy actors. *Environmental Innovation and Societal Transitions* 28 (2018) 1–13. https://doi.org/10.1016/j.eist.2018.03.006

McArdle, S., Waters, L., Briscoe, J.P. & Hall, D.T. (2007). Employability during unemployment: Adaptability, career identity and human and social capital. *Journal of Vocational Behavior* 71. 247–264. doi:10.1016/j.jvb.2007.06.003

McCauley, D., & Heffron, R. (2018). Just Transition: integrating climate, energy and environmental justice. *Energy Policy*, 119, 1- 7 https://doi.org/10.1016/j.enpol.2018.04.014

McCauley, D., Pettigrew, K.A., Bennett, M.M., Todd, I. & Wood-Donnelly, C. (2022). Which states will lead a just transition for the Arctic? A DeePeR analysis of global data on Arctic states and formal observer states. *Global Environmental Change.* 73, 102480. https://doi.org/10.1016/j.gloenvcha.2022.102480

McKee-Ryan F, Song Z, Wanberg CR, Kinicki AJ. (2005). Psychological and physical well-being during unemployment: a meta-analytic study. *J. Appl. Psychol*. 90:53–76. DOI: 10.1037/0021-9010.90.1.53

McKee-Ryan, F., Song, Z., Wanberg, C. R., & Kinicki, A. J. (2005). Psychological and Physical Well-Being During Unemployment: A Meta-Analytic Study. *Journal of Applied Psychology, 90*(1), 53–76. https://doi.org/10.1037/0021-9010.90.1.53

McKee-Ryan, F.M. & Harvey, J. (2011). "I Have a Job, But . . .": A Review of Underemployment. *Journal of Management.* Vol. 37. No. 4.962-996 DOI: 10.1177/0149206311398134

McLarnon, M.J.W., Rothstein, M.G. & King, G. A. (2020). Resiliency, self-regulation and reemployment after job loss. *Journal of Employment Counselling*. Volume 57. DOI: 10.1002/joec.12149

McQuaid & Bergmann, 2016. Employment changes in the sustainable energy sector in Scotland. *World Journal of Science, Technology and Sustainable Development* Vol. 13 No. 1, 2016 pp. 2-17, DOI 10.1108/WJSTSD-07-2015-0038

Memon, Z.A. & Rashdi, R.S. (2008). Knowledge proximity and technological relatedness in offshore oil and gas and offshore wind technology in the United Kingdom. *International Journal of Technology Management and Sustainable Developmen*t, 7(10). Pp59-70. doi: 10.1386/ijtm7.1.59/1

Miller, C.A., & Richter, J. (2014). Social Planning for Energy Transitions. *Current Sustainable/Renewable Energy Reports* 1 (3) (2014): 77–84. doi:10.1007/s40518-014-0010-9

Milliken, M. & Lindner, L. (2023). The Future of Energy & Work in the United States: The American Oil & Gas Worker Survey. *True Transition*. Retrieved from: https://www.truetransition.org/_files/ugd/0ad80c_069ea867b3f044afba4dae2a1da8d737.pdf?index=true

Mirza, N.A., Akhtar-Danesh, N.A., Noesgaard, C., Martin, L. & Staples, E (2014) A concept analysis of abductive reasoning. *Journal of Advanced Nursing* 70(9), 1980–1994. doi: 10.1111/jan.12379

Mitchell, Levin & Krumboltz. (1999). Planned Happenstance: Constructing Unexpected Career Opportunities. *JOURNAL OF COUNSELING & DEVELOPMENT*. VOLUME 77

Mohr, K. (2021). Breaking the Dichotomies: Climate, Coal, and Gender. Paving the Way to a Just Transition. The Example of Colombia. *Energies*, 14, 5457. https:// doi.org/10.3390/en14175457

Moorhouse, A. & Caltabiano, M.L. (2007) Resilience and unemployment: exploring risk and protective influences for the outcome variables of depression and assertive job searching. *Journal of employment counselling*. Volume 44. https://doi.org/10.1002/j.2161-1920.2007.tb00030.x

Morena, E. (2018). Securing workers' rights in the transition to a low carbon world: the Just Transition concept and its evolution. In *Routledge Handbook of Human Rights and Climate Guidance (eds Duyck, S., Jodoin, S. & Johl, A)*. Pp292-298. London; Routledge.

Morgan & Smirchich (1980). The case for qualitative research. The Academy of Management Review, Vol. 5, No. 4, pp. 491-500

Morgan, David L. 2007. Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research* 1: 48–76. https://doi.org/10.1177/2345678906292462

Morgan, David. L. 2014. Pragmatism as a paradigm for social research. *Qualitative Inquiry* 20: 1045–53. https://doi.org/10.1177/1077800413513733

Mutch, A (2004). Constraints on the Internal Conversation: Margaret Archer and the Structural Shaping of Thought. *Journal for the Theory of Social Behaviour* 34:4 0021–8308. https://doi.org/10.1111/j.1468-5914.2004.00257.x

Muttitt, G. & Kartha, S. (2020) Equity, climate justice and fossil fuel extraction: principles for a managed phase out, *Climate Policy*, 20:8, 1024-1042, DOI: 10.1080/14693062.2020.1763900

Nasirov, S., Girard, A., Peña, C., Salazar, F. & Simon, F. (2021). Expansion of renewable energy in Chile: Analysis of the effects on employment. *Energy*. Volume 226, 120410. https://doi.org/10.1016/j.energy.2021.120410

Newell, P. & Mulvaney, D. (2013). The political economy of the 'just transition'. The Geographical Journal, Vol. 179, No. 2, pp. 132–140, doi: 10.1111/geoj.12008

Ng, T. W., & Feldman, D. C. (2014). Subjective career success: A meta-analytic review. *Journal of vocational behavior*, *85*(2), 169-179. DOI: https://doi.org/10.1016/j.jvb.2014.06.001

Ng, T.W.H., Sorensen, K.L. & Eby, L.T. (2006). Locus of control at work: a meta-analysis. *Journal of Organizational Behavior*. 27, 1057–1087. DOI: 10.1002/job.416

Niessen, C. Heinrichs, N. & Dorr, S. (2009). Pursuit and Adjustment of Goals During Unemployment: The Role of Age. *International Journal of Stress Management*. Vol. 16, No. 2, 102–123. DOI: 10.1037/a0015683

Normann, H.E. & Tellmann, S.E. (2021). Trade unions' interpretation of a just transition in a fossil fuel economy. *Environmental Innovation and Societal Transitions.* Volume 40, Pages 421-434. https://doi.org/10.1016/j.eist.2021.09.007

North Sea Transition Authority (NSTA) (2022a). *33rd offshore licensing round*. Retrieved from: https://www.nstauthority.co.uk/licensing-consents/licensing-rounds/offshore-petroleum-licensing-rounds/#tabs

North Sea Transition Authority (NSTA) (2022b). *The move to net zero: overview*. Retrieved from: https://www.nstauthority.co.uk/the-move-to-net-zero/overview/

OECD (2001). The Well-being of Nations: The Role of Human and Social Capital. Centre for Educational Research and Innovation. https://doi.org/10.1787/9789264189515-en

Oei, P.Y., Brauers, H. & Herpich, P. (2020). Lessons from Germany's hard coal mining phase-out: policies and transition from 1950 to 2018. *Climate Policy*. https://doi.org/10.1080/14693062.2019.1688636

OEUK (2022a). *Business Outlook 2022*. Retrieved from: https://oeuk.org.uk/product/business-outlook-report-2022/

OEUK (2022b). *Decommissioning Insight 2022*. Retrieved from: Decommissioning Insight 2022 (oeuk.org.uk)

OGUK (2019a). *Energy Transition Outlook 2019*. Retrieved from: https://oilandgasuk.cld.bz/Energy-Transition-Outlook-2019/12/

OGUK (2019b) *Workforce report 2019*. Retrieved from: https://oilandgasuk.cld.bz/Workforce-Report-2019/5/

OGUK (2020). *Business Outlook 2020: Markets & Investment*. Retrieved from: https://oilandgasuk.cld.bz/OGUK-Business-Outlook-2020-Markets-Investments/6/

OGUK (2021a). *OGUK Economic Report 2021*. Retrieved from: https://oeuk.org.uk/wp-content/uploads/2021/08/OGUK-Economic-Report-2021.pdf

OGUK (2021b). *Workforce & Employment Insight 2021*. Retrieved from: https://oeuk.org.uk/product/workforce-insight-report-2021/

OGUK (2021c). *Building a Baseline: OGUK Diversity & Inclusion Survey Report*. Retrieved from: http://www.rgueti.com/wp-content/uploads/2021/05/UKCS-Diversity-and-Inclusion-Report.pdf

Oil & Gas UK (2018). *Workforce report 2018.* Retrieved from: https://oilandgasuk.co.uk/wp-content/uploads/2019/03/OGUK-Workforce-Report-2018.pdf

Olson-Hazboun, S. (2018). "Why are we being punished and they are being rewarded?" views on renewable energy in fossil fuels-based communities of the U.S. west. *The Extractive Industries and Society*, 5, 366–374. https://doi.org/10.1016/j.exis.2018.05.001

ONS (Office for National Statistics) (2022). Low carbon and renewable energy economy, UK: 2020. Retrieved from: https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2020#:~:text=1.-,Main%20points,no%20significant%20change%20since%202014.

OPITO (2018). *UKCS Workforce Dynamics 2018-2035: Shaping the skills of tomorrow*. Retrieved from: https://downloads.opito.com/downloads/ukcs-workforce-dynamics-review.pdf

OPITO (2019). *UKCS Workforce Dynamics: The Skills Landscape 2019-2025*. Retrieved from: https://downloads.opito.com/downloads/Publications/UKCS-Workforce-Dynamics-The-Skills-Landscape-2019-2025.pdf

Organization for Economic Cooperation and Development (OECD). (2001) *The well-being of nations: the role of human and social capital*. OECD Publications, Paris. Retrieved from: https://www.oecd-ilibrary.org/docserver/9789264189515-en.pdf?expires=1666880205&id=id&accname=guest&checksum=FA3106E6EBC978FB59DA8F43E6F12799

Ormerod, R. (2006). The history and ideas of pragmatism. Journal of the Operational Research Society, 57, 892–909. DOI: 10.1057/palgrave.jors.2602065

Ostry, A.S., Hershler, R., Kelly, S., Demers, P., Teschke, K. & Hertzman, C. (2001). Effects of de-industrialization on unemployment, re-employment, and work conditions in a manufacturing workforce. *BMC Public Health*. 1:15 https://doi.org/10.1186/1471-2458-1-15

Oyewo, A.S., Solomon, A.A., Bogdanov, D., Aghahosseini, A., Mensah, T.N.O., Ram, M. & Breyer, C. Just transition towards defossilised energy systems for developing economies: A case study of Ethiopia. Renewable Energy. Volume 176, Pages 346-365. https://doi.org/10.1016/j.renene.2021.05.029

Pai, Emmerling, Drouet, Zerriffi & Jewell (2021). Meeting well-below 2C target would increase energy sector jobs globally. *One Earth.* 4, 1026–1036. https://doi.org/10.1016/j.oneear.2021.06.005

Pai, Harrison & Zerriffi (2020). A SYSTEMATIC REVIEW OF THE KEY ELEMENTS OF A JUST TRANSITION FOR FOSSIL FUEL WORKERS. CLEAN ECONOMYWORKING PAPER SERIES. Smart Prosperity Institute Clean Economy Working Paper Series. APRIL 2020 / WP 20-04. Retrieved from: https://institute.smartprosperity.ca/sites/default/files/transitionforfossilfuelworkers.pdf

Parkes, K. R. (1992). Mental health in the oil industry: a comparative study of onshore and offshore employees. *Psychological Medicine*. 22, 997-1009

Parkes, K. R. (2012). Shift schedules on North Sea oil/gas installations: A systematic review of their impact on performance, safety and health. Safety Science. Volume 50, Issue 7. Pages 1636-1651. https://doi.org/10.1016/j.ssci.2012.01.010

Parkes, K. R. (2015). Sleep patterns of offshore day-workers in relation to overtime work and age. *Applied Ergonomics*. Volume 48. Pages 232-239. https://doi.org/10.1016/j.apergo.2014.12.004

Parris, M.A. & Vickers, M.H. (2010). "Look at Him ... He's Failing": Male Executives' Experiences of Redundancy. *Employ Respons Rights J* (2010) 22:345–357 DOI 10.1007/s10672-010-9156-9

Paul K.I. & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior* 74, 264–282. oi:10.1016/j.jvb.2009.01.001

Peirce C.S. (1903, reprinted 1998) Pragmatism as the logic of abduction. In The Essential Peirce: Selected Philosophical Writings: Volume 2 (1893–1913) (Peirce Edition Project, ed.), Indiana University Press, Bloomington, IN, pp. 226–241

Peterie, M., Ramia, G., Marston, G. & Patulny, R. (2019). Social Isolation as Stigma Management: Explaining Long-Term Unemployed People's 'Failure' to Network. *Sociology.* Vol. 53(6) 1043 –1060. DOI: 10.1177/0038038519856813

Petriglieri, J. L. (2011). Under threat: Responses to and the consequences of threats to individual's identities. *Academy of Management Review*, 36(4), 641–662. https://doi.org/10.5465/amr.2009.0087

Petrucci, T., Blau. G. & McCLendon. J. (2015). Effect of Age, Length of Unemployment, and Problem-Focused Coping on Positive Reemployment Expectations. *Journal of Employment Counseling.* Vol 52 (4) 171-177. DOI: 10.1002/joec.12022

Pettigrew, A. M. 1990. Longitudinal field research on change: Theory and practice. *Organization Science*. 1: 267-292.

Philips, D.C., (2014). Getting to work: Experimental evidence on job search and transportation costs. *Labour Economics*. Volume 29 Pages 72-82. https://doi.org/10.1016/j.labeco.2014.07.005

Pianta, M. & Lucchese, M. (2020). Rethinking the European Green Deal: An Industrial Policy for a Just Transition in Europe. *Review of Radical Political Economics*. Vol. 52(4) 633–641. DOI: 10.1177/0486613420938207

Pillow, W. 2003. “Confession, Catharsis, or Cure? Rethinking the Uses of Reflexivity as Methodological Power in Qualitative Research.” International Journal of Qualitative Studies in Education 16 (2): 175 –196. doi:10.1080/0951839032000060635

Pollin, R. & Calacci, B. (2019). The Economics of Just Transition: A Framework for Supporting Fossil Fuel–Dependent Workers and Communities in the United States. *Labor Studies Journal*. Vol. 44(2) 93–138. DOI: 10.1177/0160449X18787051

Popp, D., Vona, F., Marin, G. & Chen, Z. (2021). The Employment Impact of a Green Fiscal Push. *Brookings Papers on Economic Activity* , FALL 2021., pp. 1-49**.** DOI 10.3386/w27321

Potter, J., & Hepburn, A. (2005). Qualitative interviews in psychology: Problems and possibilities. *Qualitative Research in Psychology*, *2*(4), 281-307. https://doi.org/10.1191/1478088705qp045oa

Pouyaud, J. (2016). For a Psychosocial Approach to Decent Work. *Front. Psychol*., Vol 7 (422). doi: 10.3389/fpsyg.2016.00422

Pratt, S.F. (2016). Pragmatism as Ontology, Not (Just) Epistemology: Exploring the Full Horizon of Pragmatism as an Approach to IR Theory. International Studies Review (2016) 18, 508–527. doi: 10.1093/isr/viv003

Price, R.H., Choi, J.N., & Vinokur, A.D. (2002). Links in the chain of adversity following job loss: how financial strain and loss of personal control lead to depression, impaired functioning, and poor health. *J. Occup. Health Psychol*.7:302–12. DOI: 10.1037//1076-8998.7.4.302

Prinz, L. & Pegels. P. (2018). The role of labour power in sustainability transitions: Insights from comparative political economy on Germany’s electricity transition. *Energy Research & Social Science.* Volume 41, July 2018, Pages 210-219. https://doi.org/10.1016/j.erss.2018.04.010

Prussia, G.E., Fugate, M. & Kinicki, A.J. (2001). Explication of the coping goal construct: implications for coping and reemployment. *J Appl Psychol*. 86(6):1179-90. doi: 10.1037/0021-9010.86.6.1179.

Pryor, R. G. L., & Bright, J. E. H. (2003). The chaos theory of careers. *Australian Journal of Career Development*, 12, 12–20.

Pryor, R. G. L., & Bright, J. E. H. (2014). The Chaos Theory of Careers (CTC): Ten years on and only just begun. Australian Journal of Career Development, Vol. 23(1) 4–12. DOI: 10.1177/1038416213518506

Pucheta, M.; Alonso, C.A..; & Sánchez, P. S. (2021). Just Transition and Workers’ Rights in the Global South: The Recent Argentine and Chilean Nationally Determined Contributions. *Sustainability*, 13, 9616. https://doi.org/10.3390/ su13179616

Ram, M., Aghahosseini, A. & Breyer, C. (2020). Job creation during the global energy transition towards 100% renewable power system by 2050. *Technological Forecasting & Social Change* 151, 119682. DOI: 10.1016/j.techfore.2019.06.008

Rawls, J. (1971). *A Theory of Justice*. Cambridge, MA: Harvard University Press

Reed-Dahany D. (2004). *Locating Bourdieu*. Bloomington N: Indiana University Press

Reichertz, J. (2010). Abduction: The Logic of Discovery of Grounded Theory. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *11*(1). https://doi.org/10.17169/fqs-11.1.1412

RGU ETI (Robert Gordons’ University Energy Transition Institute). (2021). *UK offshore energy workforce transferability review*., Retrieved from: https://www.rgueti.com/wp-content/uploads/2021/05/workforce-transferability-report.pdf

Riessman, C. (1993). *Narrative analysis*. California, USA: SAGE Publications Ltd

Rinehart, K.E. (2021). Abductive analysis in qualitative inquiry. *Qualitative Inquiry*, Vol. 27(2) 303 – 311

Robinson, O. (2014). Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. *Qualitative Research in Psychology*, vol 11, 25-41. Doi: 10.1080/14780887.2013.801543

Robson, Colin. 2000. *Real World Research*. Oxford, Blackwell.

Roden, J. (2021). Exploring the Perceived Health, Community, and Employment Impacts of an Announced Closure of a Coal-Fired Power Station in Upper Hunter Valley, Australia. *INTERNATIONAL PERSPECTIVES*, 83 (7).

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs: General and Applied, 80, 1–28.

Rotter, J. B. (1990). Internal versus external control of reinforcement: A case history of a variable. American Psychologist, 45, 489–493

Rowland, Waddell & McKenna (2015). Are We There Yet? A Technique to Determine Theoretical Saturation. Journal of Computer Information Systems, vol 56(1)., 40-47. Doi: 10.1080/08874417.2015.11645799

Sacks, H. (1992) *Lectures on Conversation* (2 vols), edited by G. Jefferson. Oxford: Basil Blackwell

Saks, A.M. (2006). Multiple predictors and criteria of job search success. *Journal of Vocational Behavior*. 68, pp400–415. doi:10.1016/j.jvb.2005.10.001

Saks, A.M., Zikic, J. & Koen, J. (2015). Job search self-efficacy: Reconceptualizing the construct and its measurement. *Journal of Vocational Behavior*. Volume 86. Pages 104-114. https://doi.org/10.1016/j.jvb.2014.11.007

Sanz-Hernandez, A. (2020). How to change the sources of meaning of resistance identities in historically coal-reliant mining communities. Energy Policy, 139, 111353. https://doi.org/10.1016/j.enpol.2020.111353

Saunders, M., Lewis, L. & Thornhill, A. (2019). *Research methods for Business Students* (8th Ed). UK: Pearson Education

Savickas, M. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *Career Development Quarterly*, 45(3), 247–259. https://doi.org/10.1002/j.2161-0045.1997.tb00469.x

Savickas, M. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *Career Development Quarterly*, 45(3), 247–259. https://doi.org/10.1002/j.2161-0045.1997.tb00469.x

Schmidt, C.V.H. & Flatten, T.C. (2021). Crossover of resources within formal ties: How job seekers acquire psychological capital from employment counsellors. *Journal of Organizational Behaviour*. Volume 43, Issue4, Pages 604-619. https://doi.org/10.1002/job.2578

Schultz, T. W. (1961). Investment in Human Capital. *The American Economic Review* LI (1), 1-17.

Schuring, Robroek, van Otten, Coos & Burdorf (2013). The effect of ill health and socioeconomic status on labor force exit and re-employment: a prospective study with ten years follow-up in the Netherlands. *Scand J Work Environ Health*. 39(2):134-143. doi:10.5271/sjweh.3321

Scrimpshire, A. and Lensges, M. (2022), "Fear after being fired: the moderating role of resilience in lessening the time between employment", *Personnel Review*, Vol. 51 No. 9, pp. 2129-2141. https://doi.org/10.1108/PR-12-2020-0860

Sen, A. (2009). *The Idea of Justice*. London: Penguin Books

Sewell (1992). A Theory of Structure: Duality, Agency, and Transformation. *American Journal of Sociology*, Vol. 98, No. 1, pp. 1-29

Sharma, A. & Banerjee, R. (2021). Framework to analyze the spatial distribution of the labor impacts of clean energy transitions. *Energy Policy*. Volume 150, 112158. https://doi.org/10.1016/j.enpol.2021.112158

Sharpe, S.A. & Martinez-Fernandez, C.M. The Implications of Green Employment: Making a Just Transition in ASEAN. Sustainability 2021, 13, 7389. https:// doi.org/10.3390/su13137389

Shepherd, M. (2015).*Oilstrike North Sea*. Edinburgh: Luath Press

Sicotte, D.M., Joyce, K.A. & Hesse, A. (2022). Necessary, welcome or dreaded? Insights on low-carbon transitions from unionized energy workers in the United States. *Energy Research & Social Science* 88 (2022) 102511. https://doi.org/10.1016/j.erss.2022.102511

Silverman, D. (2017). *Doing Qualitative research* (5th ed). London: SAGE Publications Ltd

Skärlund, M., Åhs, A. & Westerling, R. (2012). Health-related and social factors predicting non-reemployment amongst newly unemployed. *BMC Public Health* 2012, 12:893 http://www.biomedcentral.com/1471-2458/12/893

Skills Development Scotland (2019). *A Human Future Strategic Plan 2019–2022*. Skills Development Scotland. Retrieved from: https://www.skillsdevelopmentscotland.co.uk/media/45753/a-human-future-strategic-plan-2019-2022.pdf

Smith, J.M. & Tidwell, A. S.D. (2016). The everyday lives of energy transitions: Contested sociotechnical imaginaries in the American West. *Social Studies of Science*, 46(3) 327 –350. DOI: 10.1177/0306312716644534

Snell, D. (2018). 'Just transition'? Conceptual challenges meet stark reality in a 'transitioning' coal region in Australia, *Globalizations*, 15:4, 550-564, DOI: 10.1080/14747731.2018.1454679

Snell, D., Schmitt, D., Glavas, A. & Bamberry, L. (2015). Worker stress and the prospect of job loss in a fragmented organisation. *Qualitative Research in Organizations and Management: An International Journal*. Vol. 10 No. 1, pp. 61-81, DOI 10.1108/QROM-03-2014-1210

Snyder C.R., Irving, L., Anderson, J. (1991). Hope and health: measuring the will and the ways. In *Handbook of Social and Clinical Psychology*, ed. CR Snyder, DR Forsyth, pp. 285–305. Elmsford, NY:

Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, 13(4), 249–275. https://doi.org/10.1207/S15327965PLI1304_01

Solove, E., Fisher, G.G. & Kraiger, K. (2015). Coping with Job Loss and Reemployment: A Two-Wave Study. J Bus Psychol (2015) 30:529–541 DOI 10.1007/s10869-014-9380-7

Sooriyaarachchi, T.M., Tsai, T., El Khatib, S., Farid, A.M. & Mezher, T. (2015). Job creation potentials and skill requirements in, PV, CSP, wind, water-to-energy and energy efficiency value chains. *Renewable and Sustainable Energy Reviews* 52, 653–668. DOI: 10.1016/j.rser.2015.07.143

Sovacool ,B.K. & Dworkin, M.H. (2014). *Global Energy Justice*. Cambridge: Cambridge University Press

Spradley, J (1979). *The ethnographic interview*. US: Waveland Press Inc

Stavropolous, S. & Burger, M.J. (2020). Modelling strategy and net employment effects of renewable energy and energy efficiency: A meta-regression. *Energy Policy* 136 111047. https://doi.org/10.1016/j.enpol.2019.111047

Stevis, D. & Felli, R. (2015). Global labour unions and just transition to a green economy. *Int Environ Agreements* (2015) 15:29–43 DOI 10.1007/s10784-014-9266-1

Stolove, C.A., Galatzer-Levy, I.R. & Bonnano, G. A. (2017). Emergence of depression following job loss prospectively predicts lower rates of reemployment. *Psychiatry Research* 253 (2017) 79–83. http://dx.doi.org/10.1016/j.psychres.2017.03.036

Strangleman, T. (2001). Networks, Place and Identities in PostIndustrial Mining Communities. *International Journal of Urban and Regional Research.* Volume. 25.2.

Stryker, S. (1987). Identity theory: developments and extensions. In K. Yardley & T. Honess (eds), Self and identity: psychosocial perspectives (pp89-103). Chichester, England: Wiley

Sutherland, V.J. & Cooper, C.L. (1996). STRESS IN THE OFFSHORE OIL AND GAS EXPLORATION AND PRODUCTION INDUSTRIES: AN ORGANIZATIONAL APPROACH TO STRESS CONTROL. *Stress Medicine*. VOL. 12: 27-34

Šverko, B., Galić, Z., Seršić, D.M. & Galešic, M. (2008) Unemployed people in search of a job: Reconsidering the role of search behavior. *Journal of Vocational Behavior* 72 415–428. oi:10.1016/j.jvb.2007.11.006

Swennenhuis, F., Mabon, L., Flach, T.A. & de Coninck,, H. What role for CCS in delivering just transitions? An evaluation in the North Sea region. *International Journal of Greenhouse Gas Control.* Volume 94, 102903. https://doi.org/10.1016/j.ijggc.2019.102903

Tajfel, H. & Turner, J.C., (1986). The social identity of intergroup behaviour. In *The psychology of intergroup relations*, ed Worchel, S., Austin, W.G., pp7-24. Chicago, US: Nelson Hall

The Guardian (2021). How to avoid 'Zoom fatigue' during the Covid pandemic. *The Guardian*, 27th February 2021. Retrieved from: https://www.theguardian.com/technology/2021/feb/27/how-to-avoid-zoom-fatigue-during-covid-pandemic

Thomas, A. (2021). Framing the just transition: How international trade unions engage with UN climate negotiations. *Global Environmental Change*. Volume 70, 102347. https://doi.org/10.1016/j.gloenvcha.2021.102347

Thomas, D.R. & Hodges, I. (2010). Chapter 3: Developing research aims and objectives. *Designing and planning your research project: core skills for social and health researchers*. Sage Publications.

Thompson, M.N., Dahling, J.J., Chin, M.Y. & Melloy, R.C. (2017). Integrating Job Loss, Unemployment, and Reemployment With Social Cognitive Career Theory. *Journal of Career Assessment.* Vol. 25(1) 40-57. DOI: 10.1177/1069072716657534

Timmermans, S. & Tavory, I. (2012). Theory Construction in Qualitative Research: From Grounded Theory to Abductive Analysis. *Sociological Theory* 30(3) 167 –186. DOI: 10.1177/0735275112457914

Tomassetti, P. (2021). From Treadmill of Production to Just Transition and Beyond. *European Journal of Industrial Relations*. Vol. 26(4) 439–457. https://doi.org/10.1177/09596801209517

Tomlinson, J., Muzio, D., Sommerlad, H., Webley, L. & Duff, L. (2013). Structure, agency and career strategies of white women and black and minority ethnic individuals in the legal profession. *Human Relations*. 66(2) 245 –269. DOI: 10.1177/0018726712460556

TUC (Trade Unions Congress). (2019). *A just transition to a greener, fairer economy: A TUC report.* Retrieved from: https://www.tuc.org.uk/research-analysis/reports/just-transition-greener-fairer-economy

Tuncay, T. & Yildirim, B. (2015). Factors affecting the psychological distress among unemployed and re-employed individuals. *Career Development International*. Vol. 20 No. 5. DOI 10.1108/CDI-02-2015-0018

UKOOG (United Kingdom Onshore Oil and Gas) (2022). *Onshore extraction: history*. Retrieved from: https://www.ukoog.org.uk/onshore-extraction/history [Accessed 30 November 2022]

UNFCCC (2015). Conference of the Parties (COP), 2015. Adoption of the Paris Agreement. Proposal by the President., In: Paris Climate Change Conference - November, COP 21. p. 32. doi:FCCC/CP/2015/L.9/Rev.1.

UNFCCC (2016). Just transition of the workforce, and the creation of decent work and quality jobs: Technical paper by the Secretariat. Retrieved from http://unfccc.int/resource/docs/2016/tp/07.pdf

van den Horst, A.C., Klehe, U-C. & van der Heijden, B.I.J.M. (2017). Adapting to a looming career transition: How age and core individual differences interact. *Journal of Vocational Behavior.* 99 (2017) 132–145. http://dx.doi.org/10.1016/j.jvb.2016.12.006

van Hooft, E.A.J. & Crossley (2008). The Joint Role of Locus of Control and Perceived Financial Need in Job Search. *International Journal of Selection and Assessment.* 16:3, pp. 258–271; doi 10.1111/j.1468-2389.2008.00432.x

van Hooft, E.A.J. & Noordzij, G. (2009). The Effects of Goal Orientation on Job Search and Reemployment: A Field Experiment Among Unemployed Job Seekers. *Journal of Applied Psychology*. Vol. 94, No. 6. DOI: 10.1037/a0017592

van Hooft, E.A.J. (2014). Motivating and Hindering Factors During the Reemployment Process: The Added Value of Employment Counselors' Assessment. *Journal of Occupational Health Psychology*. Vol. 19, No. 1, 1–17. DOI: 10.1037/a0035118

van Hooft, E.A.J., Kammeyer-Mueller, J. D., Wanberg, C. R., Kanfer, R., & Basbug, G. (2021). Job search and employment success: A quantitative review and future research agenda. *Journal of Applied Psychology*, *106*(5), 674–713. https://doi.org/10.1037/apl0000675

van Hooft, E.A.J., van Hoye, G. & van den Hee, S.M. (2022). How to Optimize the Job Search Process: Development and Validation of the Job Search Quality Scale. *Journal of Career Assessment*. Vol. 30(3) 474–505. DOI: 10.1177/10690727211052812

van Hooft, E.A.J., Wanberg, C.R. & van Hoye, G. (2012). Moving beyond job search quantity: Towards a conceptualization and self-regulatory framework of job search quality. *Organizational Psychology Review*. 3(1) 3–40. DOI: 10.1177/2041386612456033

van Hoye, G., Saks, A.M., Lievens, F. & Weijters, B. (2015). Development and test of an integrative model of job search behaviour. *European Journal of Work and Organizational Psychology*. Vol. 24, No. 4, 544–559, http://dx.doi.org/10.1080/1359432X.2014.964214

van Hoye, G., van Hooft, E.A.J., & Lievens, F. (2009). Networking as a job search behaviour: A social network perspective. *Journal of Occupational and Organizational Psychology*. 82, 661–682. DOI:10.1348/096317908X360675

van Maanen, J., ***S****ø*rensen, J.B. & Mitchell, T.R. 2007. THE INTERPLAY BETWEEN THEORY AND METHOD. Academy of Management Review 2007, Vol. 32, No. 4, 1145–1154. https://doi.org/10.5465/amr.2007.26586080

Vansteenkiste, S., Verbruggen, M. & Sels, L. (2016). Flexible job search behaviour among unemployed jobseekers: antecedents and outcomes, *European Journal of Work and Organizational Psychology*, 25:6, 862-882, DOI: 10.1080/1359432X.2016.1168402

Velicu, I. & Barca, S. (2020) The Just Transition and its work of inequality. *Sustainability: Science, Practice and Policy*. 16:1, 263-273, DOI: 10.1080/15487733.2020.1814585

Vinokur, A.D. & Schul, Y. (2002). The Web of Coping Resources and Pathways to Reemployment Following a Job Loss. *Journal of Occupational Health Psychology*. Vol. 7, No. 1, 68–83. DOI: 10.1037//1076-8998.7.1.68

Walk, P., Braunger, I., Semb, J., Brodtmann, C., Oei, P.-Y & Kemfert, C. (2021). Strengthening Gender Justice in a Just Transition: A Research Agenda Based on a Systematic Map of Gender in Coal Transitions. *Energies*. 14, 5985. https://doi.org/10.3390/ en14185985

Walsh, J. (2021) A just transition for US workers is within reach. *Bulletin of the Atomic Scientists*. 77:2, 86-89, DOI: 10.1080/00963402.2021.1886447

Wanberg, C.R. (1997). Antecedents and Outcomes of Coping Behaviors Among Unemployed and Reemployed Individuals. *Journal of Applied Psychology*. Vol. 82, No. 5, 731-744

Wanberg, C.R. (2012). The Individual Experience of Unemployment. *Annual Review of Psychology*. 63:369–96. Doi 10.1146/annurev-psych-120710-100500

Wanberg, C.R., Ali, A.A. & Csillag, B (2020). Job Seeking: The Process and Experience of Looking for a Job. Annual Review of Organizational Psychology and Organizational Behavior. 7:315–37. https://doi.org/10.1146/annurev-orgpsych-012119-044939

Wanberg, C.R., Glomb, T.M., Song, Z. & Sorenson, S. (2005). Job search Persistence During Unemployment: A 10-Wave Longitudinal Study. *Journal of Applied Psychology*. Vol. 90, No. 3, 411– 430 0021. DOI: 10.1037/0021-9010.90.3.411

Wanberg, C.R., Hough, L.M. and Song, Z. (2002). Predictive validity of a multidisciplinary model of reemployment success. *Journal of Applied Psychology*, vol 8796), pp 1100-1120. Doi 10.1037/0021-9010.87.6.1100

Wanberg, C.R., Kanfer, R. & Banas, J.T. (2000). Predictors and Outcomes of Networking Intensity Among Unemployed Job Seekers. *Journal of Applied Psychology*. Vol. 85, No. 4, 491-503. DOI: 10.1037//0021-9010.85.4.491

Wanberg, C.R., Kanfer, R. & Rotundo, M. (1999). Unemployed individuals: Motives, job search competencies, and job search constraints as predictors of job seeking and reemployment. *Journal of Applied Psychology*, Vol 84, No 6, pp897-9*10.* DOI: 10.1037/0021-9010.84.6.897

Wanberg, C.R., Kanfer, R., & Banas, J.T. (2000). Predictors and outcomes of networking intensity among unemployed job seekers. *Journal of Applied Psychology*.85:491–503. https://doi.org/10.1037/0021-9010.85.4.491

Wanberg, Kanfer, Hamann & Zhang (2016). Age and Reemployment Success After Job Loss: An Integrative Model and Meta-Analysis. *Psychological Bulletin* 2016, Vol. 142, No. 4, 400–426. http://dx.doi.org/10.1037/bul0000019

Wang, X. & Lo, K. 2021. Just transition: A conceptual review. *Energy Research & Social Science*. Volume 82, 10229, 1-11. https://doi.org/10.1016/j.erss.2021.102291

Warhurst, C., & Knox, A. (2022). Manifesto for a new Quality of Working Life. *human relations*, *75*(2), 304-321. https://doi.org/10.1177/001872672097934

Warr, P.B. and Jackson, P.R. (1984). Men without jobs: some correlates of age and length of unemployment. *Journal of Occupational Psychology*, Vol. 57, Issue 1, pp. 77-85.

Watermann, H. Fasbender, U. & Klehe, U.-C. (2021). Predicting the self-regulated job search of mature-aged job seekers: The use of elective selection, loss-based selection, optimization, and compensation strategies. *Journal of Vocational Behavior*. Volume 128, 103591. https://doi.org/10.1016/j.jvb.2021.103591

Weller, S.A. (2019). Just transition? Strategic framing and the challenges facing coal dependent communities. *EPC: Politics and Space*. Vol. 37(2) 298–316. DOI: 10.1177/2399654418784304

Welsby, D., Price, J., Pye, S. & Ekins, P. (2021). Unextractable fossil fuels in a 1.5◦C world. *Nature* 597, 230–234. https://doi.org/10.1038/s41586-021-03821-8

Wengraf, T. (2001). *Qualitative Research Interviewing.* Thousand Oaks, CA: Sage Publications Ltd

While, A. & Eadson, W. (2021): Zero carbon as economic restructuring: spatial divisions of labour and just transition, *New Political Economy*, DOI: 10.1080/13563467.2021.1967909

White, D. (2020) Just Transitions/Design for Transitions: Preliminary Notes on a Design Politics for a Green New Deal, *Capitalism Nature Socialism*, 31:2, 20-39, DOI: 10.1080/10455752.2019.1583762

Whitehouse-Hart, J. (2012). Surrendering to the Dream: An Account of the Unconscious Dynamics of a Research Relationship. *Journal of Research Practice.* Volume 8, Issue 2.

Wilgosh, B., Sorman, A.H. & Barcena, I. (2022). When two movements collide: Learning from labour and environmental struggles for future Just Transitions. *Futures*. Volume 137, 102903. https://doi.org/10.1016/j.futures.2022.102903

Willig, C. (2013). *Introducing qualitative research in psychology*. (3rd ed.). Berkshire, UK and New York, US: Open University Press

Woolfson, C. & Beck, M, (2004). Union recognition in Britain's offshore oil and gas industry: implications of the Employment Relations Act 1999. *Industrial Relations Journal*. 35:4

Wright L, Fluharty M, Steptoe A & Fancourt D (2022) How Did People Cope During the COVID-19 Pandemic? A Structural Topic Modelling Analysis of Free-Text Data From 11,000 United Kingdom Adults. *Front. Psychol.* 13:810655. doi: 10.3389/fpsyg.2022.810655

Zadek, S. (2019). Financing a Just Transition. *Organization & Environment*. Vol. 32(1) 18–25. DOI: 10.1177/1086026618794176

Zhang, Y. & Wang, M. (2018). Climate Change Actions and Just Transition. *Chinese Journal of Urban and Environmental Studies* Vol. 6, No. 4. DOI: 10.1142/S2345748118500240

Zikic, J. & Khlehe, U.-C. (2006). Job loss as a blessing in disguise: The role of career exploration and career planning in predicting reemployment quality. *Journal of Vocational Behavior* 69. 391–409. doi:10.1016/j.jvb.2006.05.007

APPENDICES

APPENDIX 1: Participant information sheet

Research study title: A Just Transition for UK oil and gas workers: the role of structure and agency in achieving re-employment success after job loss

Study information

The research is being conducted by Kirsty Denyer as part of PhD research at Henley Business School. It is being supervised by Professor Yelena Kalyuzhnova and Dr Tatiana Rowson.

Employment in the UK's oil and gas industry is evolving, in response to climate change, declining petroleum reserves and economic conditions. Previous research suggests that individuals who experience involuntary work transitions in this context will encounter a range of psychological, social and economic factors in their search for reemployment. This study aims to identify the personal and contextual factors that influence access to 'reemployment success', defined as 'finding work quickly and/or finding a good job' (Wanberg, 2012). This study involves three groups of participants from the UK's oil and gas industry in order to approach this issue from different perspectives: workers who are seeking work after involuntary work transitions, or who have previously experienced this; individuals working in HR, managerial or leadership roles; and individuals working in academia, government, trade unions or industry bodies.

You will be asked to participate in a one-to-one confidential interview which will be recorded using virtual software. Some demographic information will then be collected. The interview process should take no more than 90 minutes to complete, although there is no time limit should you wish to be interviewed for longer. Following the recording, the data will be transcribed and used for analysis alongside data from other interviewees.

Confidentiality and anonymity will be maintained at all times. Interview transcripts will be anonymised by removing any potentially identifying names, words or phrases immediately. You will be given a pseudonym which will be used in the transcripts, for discussions with the project supervisor as well as in the draft and final versions of any report(s) arising from this research. You will not be identifiable from any written or oral report of the research. Please note that the project supervisors will have access to anonymised transcripts and analysis. Interview recordings and physical copies of transcripts will be deleted following the completion of the PhD in 2022/3. Electronic copies of anonymised interview transcripts will be retained until the completion of all work associated with the PhD (which may include written submissions to academic journals).

This project has been reviewed according to the procedures specified by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct'.

Your rights: Please note that you have the following rights in relation to this research project:

- Participation is entirely voluntary, and you have the right to withdraw at any time without having to give a reason.
- You do not have to answer particular questions if you do not wish to.
- You have the right to ask any questions before, during and after the interview.
- You have the right to ask for your data to be withdrawn from the study after the interview, as far as this is practical.
- You have the right to be given a summary of the research findings following completion of the project.
- You have the right to confidentiality and anonymity throughout this project.

- Any personal information you provide will be kept securely, and you have the right to ask for it to be destroyed.
- If you need to contact the researcher after participating, please send an email to k.l.r.denyer@pgr.reading.ac.uk.
- If you would like to contact the research supervisors, please contact:
    - Professor Yelena Kalyuzhnova: y.kalyuzhnova@henley.ac.uk
    - Dr Tatiana Rowson: t.rowson@henley.ac.uk

If you consent to participate under these conditions, please sign the project consent form. This consent form will be stored separately from any data you provide so that your responses remain anonymous.

APPENDIX 2: Project Consent Form

Please use tick box after each statement to confirm it has been read and agreed to.

1. I have read and had explained to me by Kirsty Denyer the accompanying Information Sheet relating to the project on: A Just Transition for UK oil and gas workers: the role of structure and agency in achieving re-employment success after job loss

☐

2. I understand the purposes of the project and what will be required of me, and any questions I have had have been answered to my satisfaction. I agree to the arrangements described in the Information Sheet. ☐

3. I understand what information will be collected about me, what it will be used for, who it may be shared with, how it will be kept safe, and my rights in relation to my data. ☐

4. I understand that participation is entirely voluntary and that I have the right to withdraw from the project any time, and that this will be without detriment. ☐

5 (a). I understand that the data collected from me in this study will be preserved and made available in anonymised form, so that they can be consulted and re-used by the research team. This includes potential publication in academic journals ☐

6. I understand that this project has been reviewed and approved by the relevant Research Ethics Committee. ☐

7. I have received a copy of this Consent Form and of the accompanying Information Sheet to retain ☐

Name: ……

Date of birth: ……

Signed: ……..……

Date: ……..……

I am happy to be included on a register of research participants for the purposes of being contacted about further studies by Kirsty Denyer Please tick ☐ (optional)

APPENDIX 3: Interview protocol – for Group 1 participants, individuals who are experiencing/having previously experienced seeking work after job loss

This interview protocol is semi-structured, allowing the researcher to set the topic for the interview while allowing time and space for the interviewee to bring their own insights (Kvale, 2007).

Introduction script (Jacob & Fergerson, 2012; Brinkmann, 2013):

> **"**Thank you very much for your time. As you know, I am researching the process of finding work again after involuntary work transitions, for people who have been working in Scotland's oil and gas industry. The interview should take no more than 90 minutes in total, although I don't have any time restrictions if you would like to talk for longer. I have a list of questions to ask, but please feel free to bring in any other points you'd like to that you feel are relevant.
>
> The first part of this interview is going to take a biographical narrative approach, which is a particular style of interviewing thought to be relevant to this topic. This means that we'll begin with one broad question where I'll ask you to tell me about the story of your career, and you can take as long as you like to answer it, bringing up anything that you think is relevant. I won't ask many questions while you're talking, but might take some notes about things I would like to discuss later. Once you're finished, I will ask some questions about your story. Then, for the second part of the interview, I have a list of more specific questions to ask about your experience of seeking work after job loss from Scotland's oil and gas industry.
>
> Do you have any questions before you get started?"

Question	**Academic reference**
Part I: Biographical narrative: unstructured section 1. Could you tell me about your career to date? Start wherever you like - for example, your first job, or school/university. You can have as long as you like to talk about this, and you can bring in anything that you see as relevant to your story. 2. [Misc. questions to clarify meaning and understanding of participant's narrative].	Starting with broader, descriptive background questions (Jacob & Fergerson, 2012; Spradley, 1979) Biographical narrative methods used to research the experience of job loss by similar studies (Ezzy, 2000; Gabriel et al., 2013; Gardiner et al., 2009).
Part II: Focusing on job loss and reemployment: semi-structured section *Focusing on job loss and reemployment:* 3. [if not already covered] Can you tell me about your work situation now? 4. [if not already covered] Can you tell me about the transition you're currently experiencing/previously experienced? Additional prompts if necessary: - Can you tell me what happened that's led to the situation?	Explicit clarification of topic for the rest of the interview (Spradley, 1979)

- We've spoken before about this transition being involuntary, can you tell me about that? - Can you tell me what's happening now? 5. Can you tell me what you'd like the outcome of the current situation to be? [Use participant's words to reflect back what I hear in questions 3-5 and define this involuntary work transition and reemployment success as what we'll be focusing on for the rest of the interview.]	
Structural factors: **Script:** Part of my research focuses on the practical and contextual factors on finding work after job loss – things like, being able to access training. My next few questions focus on this. 6. Can you tell me about a barrier you're facing in achieving the outcome you want? *Prompts:* - *can you tell me more about that?* - *What other barriers are you experiencing?* 7. Can you tell me about an opportunity you have encountered to get the outcome you'd like? *Prompts:* - *can you tell me more about that?* - *What other opportunities have you encountered?* 8. Can you tell me what practical things you require in order to achieve [reflect back desired outcome from question 4]? 9. Do you feel equipped with those things just now? Can you tell me more about that? 10. What, if anything, would you need to change for you to feel confident in achieving [reflect back desired outcome from question 4]?	Explaining why you are asking a certain question helps the participant frame their answer (Spradley, 1979). Seeking to understand participants' perceptions of the structural context (section 2.2). Asking for one example and then repeating the question is easier for participants than asking for *all* the barriers/opportunities at once (Spradley, 1979).
Role of agency: **Script:** The other part of my research focuses on mindset, and the psychology of navigating a work transition like this. 1. You mentioned earlier that [X] is what you'd like to happen. How much do you feel able to influence this outcome? 2. Can you tell me what feels challenging in your current situation? 3. Can you tell me if there are any upsides to your current situation?	Explaining why you are asking a certain question helps the

4. How much control do you feel you have over what happens to you in your career in general? 5. Is there anything else about the psychology/mindset of this experience that you'd like to talk about? *NB questions in this section will be adapted in the past tense for any participants who have already achieved reemployment success and are speaking about their experiences retrospectively.*	participant frame their answer (Spradley, 1979). Seeking to interpret the role of personal agency in accessing reemployment success (section 2.2). Agency questions adapted from Hitlin & Johnson's (2015) empirical scale of agency.
Part III: Wrapping up: **6. What would you give as advice to someone going through the same thing?** **7.** We're getting towards the end of my questions now. Is there anything else you'd like to mention that we haven't talked about already?	
Part IV: Demographic information: 8. I'd like to finish by collecting some demographic information from you. Please could you confirm: • Age • Gender • Ethnicity • Role • Length of time working in oil and gas industry • Length of time in current role • Highest level of education	

APPENDIX 4: Interview protocol for industry stakeholders

This interview protocol is semi-structured, allowing the researcher to set the topic for the interview while allowing time and space for the interviewee to bring their own insights (Kvale, 2007). It has been edited and updated using insights from the pilot study conducted in Spring 2020. the interviewer will use judgement to depart from the protocol when necessary to pursue unforeseen and potentially relevant topics (Jacob & Furgerson, 2012). Furthermore, protocols will be adapted continually throughout data collection to integrate ideas developing from analysis, allowing the researcher to test and gain feedback on preliminary findings.

Introduction script (Jacob & Fergerson, 2012; Brinkmann, 2013):

> **"**Thank you very much for your time. As you know, I am researching the process of finding work again after involuntary work transitions, for people who have been working in Scotland's oil and gas industry. The interview should take no more than 90 minutes in total, although I don't have any time restrictions if you would like to talk for longer. I have a list of questions to ask, but please feel free to bring in any other points you'd like to that you feel are relevant.
>
> As you know my research is on workers in Scotland's oil and gas industry who are facing involuntary work transitions. By involuntary work transitions, I mean things like redundancies, role changes, having to move to a different geographical location – any significant change in their working circumstances that is involuntary. What I'm interested in specifically is how people access work again after such an experience; and not just any job, but a job they are happy with, that they feel matches their skill level, and that they can get fairly quickly without spending a long time unemployed. That job doesn't necessarily have to be in oil and gas- it might be in another energy sector like renewables, or a whole career change. I am interviewing people who have experienced this personally and I am also interviewing people who hold leadership/HR positions in the industry and can comment on this from a managerial perspective. So, what I'm looking for from you is your views on this in your capacity as [insert role].
>
> Do you have any questions before you get started?"

Question	**Academic reference**
Part I: Warming up **Script:** I'd like to start by understanding a bit more about you and your background. 1. Can you tell me about your current role/your career in oil and gas?	Starting with broad, descriptive background question to warm up and build rapport (Jacob & Ferguson, 2012; Spradley, 1979)
Part II: Recovering from an involuntary work transition	

2. Can you tell me, broadly, about the current employment situation in Scotland's oil and gas industry? 3. Can you tell me about your view of this in your capacity as [xxx]? 4. What kind of challenges do people face in accessing work again after job loss in Scotland's oil and gas industry? 5. What kind of opportunities might they face? 6. Are there certain groups pf people who would be at a disadvantage in accessing reemployment after job loss? 7. What do you think it takes for someone to navigate an involuntary work transition successfully? (again, by 'successfully', I mean getting to an outcome that they're happy with).	Using descriptive questions to encourage the participant to speak freely, and gather examples pf the language they use (Spradley, 1979). Asking for examples and experiences to help build a picture of this phenomenon in this specific context (Spradley, 1979). Introducing structural questions, understand how they organise their knowledge in their specific context; interspersed with descriptive questions to keep the format natural and flowing (Spradley, 1979).
Part III: Sense-checking emerging theories **Script:** The aim of my study, broadly, is to identify the factors that contribute to accessing suitable work after IWT. So I'd like to check with you now some theories that are emerging from my research so far. 8. So far we've talked about [reflect back factors] Ask about the following factors if they haven't been covered already: - Skill/human capital - Social networks – professional and personal - Personal financial resources - An individual's mindset/psychology**.** -	Factors taken from theoretical framework (section 2.2. of methodology) This section will be updated continually to sense check emerging propositions/themes from other interview data and continual analysis.
Part IV: Wrapping up: **Script:** We're coming to the end of the interview now. We've spoken about [recap key themes]. 9. Is there anything else you'd like to mention that we haven't talked about already?	

Appendix 5: PDF flyer promoting study, sent to potential participants via email

What does it take to find work after job loss from the UK's oil and gas industry?

If you have a professional connection with the UK's oil and gas industry, you could be eligible to take part in this PhD study.

We're researching what it takes to find work again after job loss from the UK oil and gas industry.

This PhD study aims to identify the personal and contextual factors that influence access to re-employment after job loss for Scotland's oil and gas workers.

The re-employment could be anything: in oil and gas, in renewable energy or a different industry, setting up a business or having a career change.

If you might be interested in participating in a confidential, one-to-one interview, we would love to hear from you.

What does it involve?

- Confidential interviews, conducted over Zoom, lasting around 90 minutes in total

Are you eligible?

We are looking to interview the following groups of people:

- People who are seeking work after involuntary work transitions from Scotland's oil and gas industry, or who have previously experienced this
- Individuals in HR, managerial or leadership roles who can share their experiences of this from a managerial perspective

If you're interested in participating, or would like to find out more, please get in touch:

- Primary researcher: Kirsty Denyer, PhD researcher, Henley Business School
- email: k.l.r.denyer@pgr.reading.ac.uk