

Is Bristol's One City Approach enough to tackle the effects of job polarisation?

By Tiana Francis

Contents

Introduction.....	1
The UK labour market during the COVID-19 crisis	2
Occupational changes within the UK labour market	5
A greater issue of job quality?	7
The impact on urban cities.....	9
A focus on Bristol	11
Could the COVID-19 recession tackle the core issue? The rhetoric behind the low-skilled worker.	13
Bristol's One City Plan	15
Future goals for the <i>Bristol One City Plan</i>	17
Conclusion	20
References.....	21

Introduction

The Coronavirus pandemic and its economic effects have profoundly impacted the UK economy and the labour market's structure. However, its economic effects are unequal. Low-skilled workers in urban areas with a stronger polarised labour market are experiencing greater vulnerability to job losses attributed to COVID-19 (Chetty et al., 2020). With the UK economy plummeting, low-paid employment sectors heavily dependent on the spending of local high-income earners are most insecure (ibid). In addition to the likely economic effects of a pandemic on job losses, the acceleration of the automation of work will further increase a divide

between different income and skill-based workers. With the rise of remote working (as countries practice social distancing measures since the COVID-19 crisis), low-income workers have reported being able to perform fewer tasks remotely than their high-income counterparts (Adams-Prassl et al., 2020a). This essentially points towards the growing economic phenomenon, job polarisation and the issue of job quality. How will urban cities like Bristol approach the disproportionate effects on low-skill and wage residents, post-COVID?

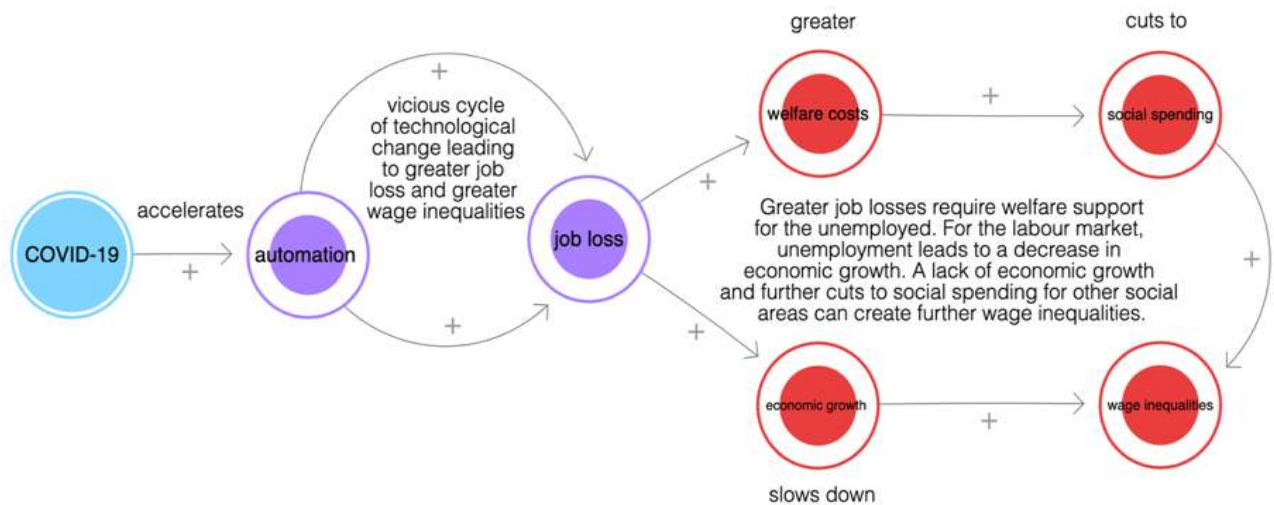
This paper explores the possible implications of job polarisation on the Bristol labour market and assesses whether its current One City Plan will effectively tackle this issue. This explores a gap in academic literature: the impact of job polarisation on low-skill and wage workers in a local labour market. A system thinking approach will be used to assess the possible implications of COVID-19 concerning the phenomenon, job polarisation. It will then raise some solutions to tackling the supply and demand factors associated with job polarisation and consequently low pay for Bristol's post-COVID recovery.

The UK labour market during the COVID-19 crisis

Could the Coronavirus pandemic acceleration of the automation of work create long-term productivity for the UK labour market? Since the 2007-08 economic crisis, labour market productivity (in terms of goods and services produced per hour worked) has stagnated for the UK (ONS, 2015). This is known as the 'productivity puzzle,' a key determinant for the UK's economic growth (ibid). This is argued to be the cause of the wide gap between firms with strong productivity growth and the much longer tail of its least productive companies impacting wage growth (Centre for Cities, 2018). If this gap was reduced and its productivity rate continued pre-2007 levels, the average worker in 2018 would have earned £5,000 more in wages (ONS, 2019). The key solution brought forward to increase economic growth is the adoption of automation in business. According to Purdy and Daugherty (2017), the use of automated technologies such as artificial intelligence in business could boost labour productivity in the UK by 25 per cent by 2030. This suggests that the use of automated technologies can further enable businesses the ability to improve their performance and therefore increase their productivity growth.

The rise of automation has been a key part of recovery for employment during the Coronavirus pandemic. Businesses have had to transform the workplace with the rise of remote work which relies on digital technologies. In terms of productivity, this appears to have had positive effects. A report conducted by TalkTalk (2020) found that 58 per cent of workers reported feeling more productive, and 52 per cent felt it was unnecessary to return to a 5-day office working week. The use of automation in business can improve labour productivity and in effect increase wages, as fewer workers are needed to produce the same amount and quality of goods and services (Acemoglu and Restrepo, 2018). This suggests that as automation becomes more widespread, this would raise productivity across the economy and enable businesses to pay their workforce higher wages. This could have positive effects on low pay, lifting thousands of workers out of low wages, further moving away from a low wage, low productivity economy. However, there are some concerns that as automation becomes more prevalent, it will exacerbate issues within the workforce such as the skills gap, and increasingly negative attitudes to changing job roles (Holmes and Mayhew, 2012). Since the COVID-19 crisis, the skill and wage gap, between low and high-skill workers has increased. The implementation of social distancing measures and the rise of remote work has led to a large increase in job losses for low-skilled non-essential workers as it is harder to complete their work tasks whilst staying safe (Palomino, Rodriguez and Sebastian, 2020). Overall, the pandemics acceleration of automating technologies in business may be the answer needed to tackle the UK's productivity puzzle. However, this may come at the expense of its workforce, especially towards their low-skill workers.

Figure 1: Potential risks of automation on the labour market.



Concurrently, productivity growth has indirectly contributed to structural occupational changes to the labour market. Autor and Salomons (2017) argue that technological advancement (i.e., automating technologies) has led to the decline or hollowing out of middle-skill routine jobs relative to the expansion of high- and low-skill jobs within the labour market. This is known as the growing economic phenomenon, ‘job polarisation’ a term popularised by Goos and Manning (2007) in the UK. Many attribute this to the rise of automation, this is concerning as Frey and Osborne (2013) suggest that 35 per cent of jobs as a result in the UK are at risk. The acceleration of automation and the subsequent job losses are unlikely to change in light of the COVID-19 crisis. Especially as automating technologies are useful in terms of productivity levels and thus economic growth, a key focus for the UK. This presents major concerns as the potential risks associated with continued job polarisation might be accelerated with an increase in job displacement and greater wage inequality in light of the pandemic (*see figure 1*).

Most concerning is that continued job polarisation will lead to a further increase in wage inequality, a prominent issue for the UK. Continued job polarisation will likely increase the median household income for high-skill workers relative to a small increase on middle- and low-skill workers, leading to greater relative poverty levels for those on the bottom of the wage distribution (Brewer et al., 2012). This suggests that whilst businesses are heavily dependent on automation, the issue of job displacement will continue affecting mid-skill employment most and inevitably continue to create the winners and losers of the UK labour market. It shows

that if we cannot continue to only focus on job displacement for middle-skill employment but its effects on other groups such as low-skilled workers. A focus on low-paid employment and tackle the skills gap could be the solution to tackling wage inequality associated with job polarisation. This will be key in moving towards a UK economy that is associated with high wage and productivity levels.

Occupational changes within the UK labour market

Early research argued that the UK labour market was experiencing structural changes associated with occupational upgrading. This can be explained using the Skill-Biased Technological Change (SBTC) hypothesis. The SBTC hypothesis argues that the expansion of high-skill work is the main driver in worsening wage inequality in industrialised nations such as the UK and the US (Autor et al., 2003). The rise of computerisation (ICT) favours high-skill labour, which further increases its productivity levels relative to low-skill employment (Goos et al., 2009). Goos et al. (2009) suggest that this had led to an increase in demand for high-skill labour (typically high-paying) which meant that the rich had less time for personal services, decreasing the demand for low-skilled (and typical low-paid) work. Thus, the non-technical and interpersonal skills associated with low-skilled work have become increasingly redundant with the rise of computerisation. Further widening wages between high- and low-skilled workers could explain the rise of wage inequality that has been a prominent issue for the UK since the 1970s (Goos and Manning, 2007). However, economists have since argued that this explanation is insufficient. Although, this explains labour market changes for the top of the wage distribution it fails to acknowledge the decline in middle-skill employment since the 1950s (Acemoglu and Autor, 2011). It predicts an increase in the demand for skills associated with high-paid work, however, the decline in the middle forms a much wider gap in the bottom of the wage distribution, allowing a two-tier economy to emerge (ibid).

Most labour market economic thinking now points towards the issue of job polarisation. Most academics argue that automation is the main cause. Autor et al. (2003) developed the Routine-Biased Technological Change (RBTC) hypothesis to explain this phenomenon in the US (Autor, 2010). The RBTC hypothesis suggests that new automating technologies are biased towards using machines to carry out routine tasks, most frequently used in middle-skill sectors of employment (Goos et al., 2014). This is based on the idea that it is easier for machines to

perform tasks in the most efficient and least costly and timely manner, as they follow precise steps and procedures that minimise human error (Autor, 2010). There is an assumption that job polarisation often leads to the wage polarisation of human labour. As it is harder for machines to substitute the labour of low-skill and high-skill work which are in either low-paid manual or high-paid cognitive jobs, as they feature fewer routine tasks (Goos and Manning, 2003). This explanation could offer a justification as to why there appears to be a disappearing of middle-skill and paid work relative to the expansion of high- and low skill and paid work, as we shift towards a more technologically based economy.

However, there is evidence that suggests that job polarisation has not led to wage polarisation, which we would expect to see based on the RBTC hypothesis. If demand-side factors e.g., the routineness of jobs were the main driver of our changing employment structures, wages would be in line with employment shares (Holmes, 2010). Changes to employment structures, however, only provides a partial account of wage inequality. As Mishel et al. (2013) found no significant differences across different skill groups in terms of wage growth. The leaves a gap in explaining whether structural occupational change impacts wage inequality as an indirect cause of increasing productivity levels. Wage inequality is frequently cited as a key consequence of job polarisation. Evidence suggests that wages are an insufficient indicator as different jobs can move into the middle of the wage distribution. Holmes and Mayhew (2012) assessed the changes to wage distributions in the UK and found that an increasing number of jobs that used to be high paying are now characterised as mid-pay. Overall, this evidence suggests that job polarisation is not a significant driver of wage polarisation and thus we should focus on the skills gap rather than wages.

Some economists argue that the UK labour market has not experienced job polarisation but rather occupational upgrading. Salvatori (2018) found no indication of polarisation during 1979-2012 across the different skill groups but instead patterns of occupational upgrading. This appears positive due to occupational upgrading, causing a relative increase of employment growth in high-paid job roles, decreases in middling occupations and less growth in low-paid roles (Clarke and Cominetti, 2019). As it suggests that our economy is becoming a high wage and skilled one. However, this still only tell us part of the story concerning our workforce. This is not the case for workers on low wages or young people, despite employment growth, 20 per cent of UK workers remained low paid (Clarke and Cominetti, 2019). In particular, the labour

market is increasingly polarised for young low-skilled females entering the workforce (Salvatori, 2018). So far, the current pandemic has impacted women on a grander scale as they are most likely to face unemployment than men (Adams-Prassl et al., 2020a). This could be the result of the rise in automation replacing mid-skill employment that young low-skilled females are most likely to enter (ibid). This is also a concern for a rising proportion of women in low-skill sectors, (most impacted by physical social distancing measures) who are likely to be on a low wage which requires fewer educational requirements (OECD, 2020). This suggests that the UK still experiences some effects of job polarisation.

Despite disagreements on whether job polarisation is an issue that affects the UK. There is strong evidence to suggest that those on the bottom of the wage distribution are most impacted by occupational changes and this issue is linked to the skills gap. As expressed earlier, this is an issue that affects young and low-skill workers, who have been most impacted during the COVID-19 crisis. The demand for low-income and young workers labour has decreased and, as a result, have been disproportionately impacted by job losses attributed to COVID-19 (Adams-Prassl et al., 2020b). In particular, evidence shows that employees under 25 years old were two and a half times more likely to work in shut-down sectors, making them more likely to experience further job displacement (Joyce and Xu, 2020). Therefore, it is important post-COVID not to only focus on employment growth that mostly benefits high skill workers (in terms of secure employment and wages), but to focus on the implications for young and low-skilled workers.

A greater issue of job quality?

Could job polarisation limit the upward mobility of low paid workers? There are growing concerns that low-skilled workers will continue to be left in low-wage jobs as high-skilled occupations have gained over 80 per cent of the employment shares lost by middle-skill occupations between 1979 and 2012 (Salvatori, 2015). McIntosh (2013) argue that a relative decline in middle-skill intermediate jobs may lead to fewer job opportunities for low-wage employees to move towards and therefore limits their upward mobility. New technological advances enable machines to complete routine tasks, leading to a greater risk of job displacement in middle-skill employment (Acemoglu and Autor, 2011). In particular young people are most likely to enter middle-skill jobs, as expressed earlier. With the increase in

educational attainment among young people, they are a growing proportion of the population unable to find good quality jobs despite being well qualified (Holmes and Mayhew, 2012). Displaced middle-skill workers face difficulty moving into highly skilled and educated jobs and instead must compete for non-routine manual work with less-educated workers, thereby depressing wages (ibid). Overall, this suggests that a potential effect of job polarisation is limiting the occupational mobility of low-skill workers.

This, in particular, presents the issue of job quality for low-skilled workers. The decline in the number of absolute middle-skill work may also leave workers with limited wage growth and those at the bottom of the wage distribution experiencing a decrease in job quality, thus increasing wage inequality (Bell and Blanchflower, 2009). This has created two extremes of the labour market. While at one end of the labour market, there are high-skilled workers who are rewarded with secure and highly paid work, at the other end, the strong growth of low-skilled workers left with insecure, precarious and low-paid work (ibid). According to Green et al. (2016), the increase in low-skilled service jobs since the 2007-08 recession has been fuelled by an influx of young students as businesses seek greater labour market flexibility. Insecurity within the labour market (e.g., labour market deregulation) has pushed for greater flexibility and growth in student work (ibid). This is most concerning as our push for flexibility has given the rise of insecure work for young people entering the workforce and low-skilled workers, e.g., zero-hour contracts and jobs in the ‘gig economy’.

There is some evidence that job polarisation affects the upward mobility of low-skilled service workers into middling occupations on a national level. Holmes and Tholen (2013) found a decline in upward mobility into middle-skill jobs during 2008-2010, more likely to move out of the labour market into unemployment. This is argued to result from the economic consequences of the 2007-08 financial crisis (ibid). However, it is crucial to understand that other factors such as education levels and age affect a worker’s occupational mobility (Holmes and Tholen, 2013). As highlighted by Autor and Dorn (2013), it is essential to look at supply-side factors that tend to be more localised, e.g., creating relevant skills and demographic shifts that impact low-wage workers occupational mobility. This suggests that without considering supply-side factors, it is difficult to understand the possible effects of job polarisation during the COVID-19 crisis on the occupational mobility of low-wage workers. According to

McIntosh (2013), even for sectors with an expected decline in middling jobs using net employment statistics as a variable ignores expected levels of replacement demand for workers. Therefore, it is likely that there will be opportunities to transition into middling occupations for low wage workers. However, the number of opportunities available to transition depends on the sector for workers.

It is important to acknowledge that worker's opportunities are likely to be affected by the changing relative demand for various skilled workers in their local region. As evidenced by international research, across different regions and cities, the degree of job polarisation varies due to spatial differences in the industrial make-up of local labour markets (Autor and Dorn, 2013). This suggests that we need to focus on local areas to understand the possible consequences of job polarisation on low-wage workers.

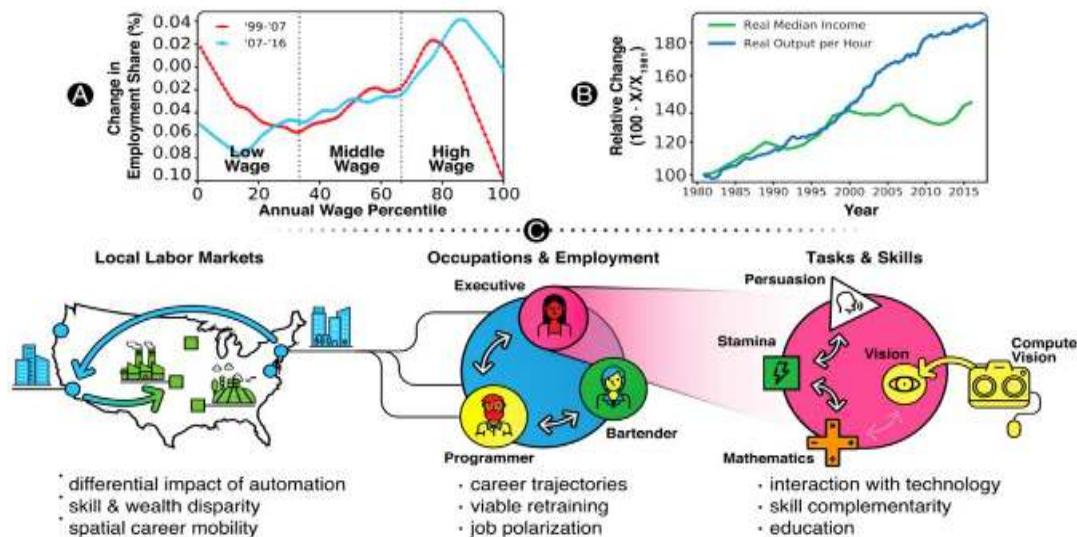
The impact on urban cities

A vast amount of academic research on the effects of job polarisation has been conducted on an international and regional scale. Despite the little evidence on its consequences on local labour markets within the UK, there is telling evidence that this varies across local areas and many urban cities have experienced problems caused by job polarisation.

Firstly, high levels of wage inequality and job polarisation have been associated with affluence. According to Lee et al. (2013), economic change tends to concentrate in certain cities characterised by higher average incomes and higher-skilled populations crucial to national economic growth. Higher average incomes tend to be located in affluent neighbourhoods creating greater urban segregation within the city and further wage inequality (ibid). Recent research in France highlights that the distinction between large and smaller cities is important in job polarisations differing effects. Davis et al. (2020) found that across most cities was a more substantial decline in middle-skill jobs. However, the effects were more prominent in larger cities, and these cities experienced a stronger transition towards high-skill jobs compared to smaller cities more likely to move into low-skill jobs (ibid). This could explain why emerging evidence indicates that workers in low-skill service jobs are most vulnerable to COVID-19 job losses in affluent urban cities with stronger polarised labour markets as they are upskilled (Chetty et al., 2020). This suggests that the effects of wage inequality and polarisation are prominent in local areas, although with differing effects. In particular,

communities with a higher concentration of high-skill and wage jobs increasingly become the drivers of national economic growth but also urban segregation.

Figure 2: The possible impact of automation on local labour markets.



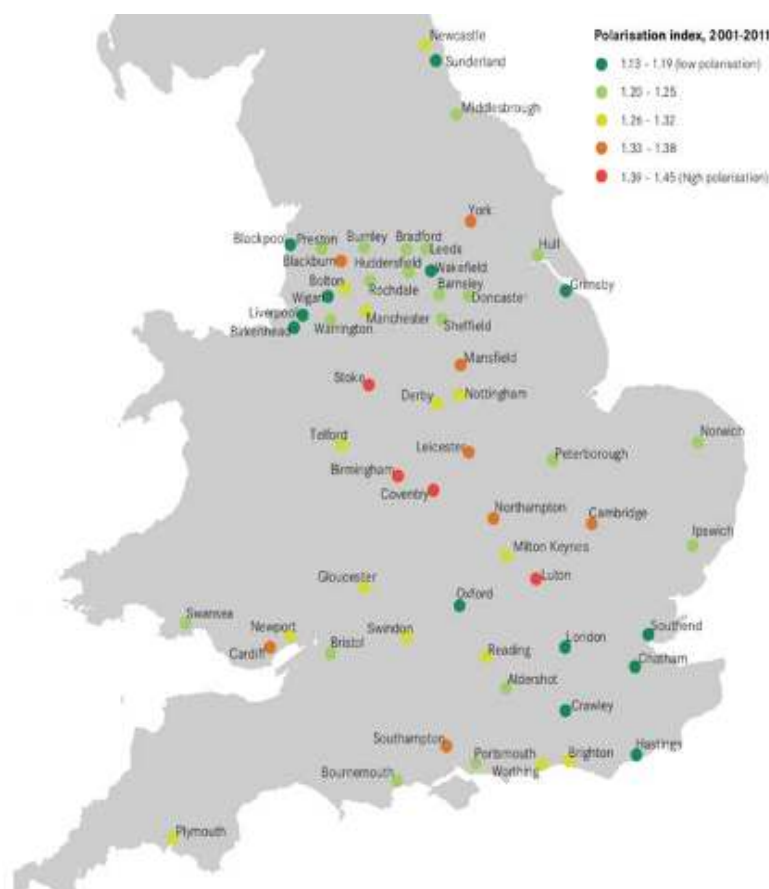
Source: (Frank et al., 2019).

Secondly, research studies suggest a significant link between urbanisation, job polarisation and high skills concentration. Evidence from the US demonstrates that local labour markets with larger proportions of manufacturing and knowledge-intensive sectors experience greater levels of job polarisation with an above-average decline in the share of routine jobs (Autor and Dorn, 2013). This is often associated with urban areas, which have seen a higher growth rate in high-skill jobs, likely influenced by local factors such as opportunities in skill training that increase productivity levels for these workers (Glaeser and Resseger, 2010). Local areas are becoming increasingly divided, with urban areas experiencing the greatest effects of job polarisation. Figure 2 illustrates the link between skills, employment (job polarisation), and local labour markets. In particular, issues of skill and wealth gaps, the differing effects of automation and career mobility in local labour markets as a consequence of job polarisation (*see figure 2*). On a local scale, ideally, workers are trained in valuable skills relevant to their local labour market allowing for career mobility into accessing more opportunities for high-wage employment (Frank et al., 2019). However, the expansion of high paid jobs in urban cities leads to an increase in the demand for low-skill and personal service jobs (Mazzolari and Ragusa, 2013). This raises difficulties in opportunities to access high-quality jobs. As these high-wage, non-

routine jobs often require years of professional skills and experience that are often non-transferable and difficult to obtain (Frank et al., 2019). This implies that those with experience in routine or non-routine manual work will not have learnt the cognitive skills required for a high wage. This raises a major concern as urban cities are increasingly dividing into good jobs and low-quality jobs, with fewer opportunities for career mobility due to their skill level.

A focus on Bristol

Figure 3: Polarisation index of British cities 2001-2011



Source: (Clayton et al., 2014).

Bristol is an affluent city in the South West predicted to have a strong recovery post-COVID in terms of economic growth. Compared to other UK cities, Bristol's strong economy appears to have been hardly impacted by the severe economic impacts of the coronavirus pandemic (Magrini, 2020). In terms of job polarisation, Figure 3 illustrates the degree of job polarisation across cities in the UK, using a polarisation index between 2001 and 2011. Bristol has a low

polarisation score, below 1.25, suggesting no massive decline in middle-wage in comparison to low- and high-paid jobs (*see figure 3*). This suggests that job polarisation might not be a vital issue affecting the residents of Bristol. However, there have been some concerns about using this indicator. It does not allow for potential shifts in median incomes, as those in high and low-paying jobs might move closer to the middle of the wage distribution over time (Holmes and Tholen, 2013). Therefore, overall job polarisation appears to not be a key issue for Bristol, although we should be mindful when using this indicator.

Based on government statistics, job polarisation might be a more outstanding issue than the polarisation index suggested in Bristol. As a major productive technology hub of the UK, Bristol might have faced stronger polarisation than other cities based on Autor and Dorn (2013) research. As a result, Bristol's labour market is geared towards high-skilled, which is typically high-paid employment. In 2020, 56.2 per cent of Bristol's workforce would-be administrators, executives, or senior leaders or working in technical or associate professional occupations, compared to a national average of 50.2 per cent (Nomis, 2020). This is reflected in its highly skilled workforce, with 51.8 per cent of Bristol residents holding degrees at NVQ level 4 or above, which is 8.7 per cent higher than the national average (*ibid*). This highlights that the Bristol labour market is somewhat polarising with the expansion in high-pay jobs, suggesting a lower demand for middle and low wage jobs. This is evidenced by around 18.2 per cent of its workforce appear to be working in middling occupations (Nomis, 2020). This suggests that there is a significant decline in mid-pay and skilled jobs. This is a concern as this would likely make it more difficult for residents with low qualifications to enter and progress in the labour market at a salary that allows them to live in the affluent city of Bristol.

Low pay and wage inequality also appear to be prevalent problems in the Bristol labour market, issues associated with job polarisation and job quality. Regarding low pay, Bristol residents, compared to the UK average, are less likely to be in low-paying jobs, earning less than 66 per cent of the national average income (Webber et al., 2012). However, there are substantial disparities within Bristol, particularly for North West and South Bristol, who are significantly more likely to be on wages closer to the national average (*ibid*). This appears to be an issue in light of the COVID-19 pandemic, associated with the skills gap disproportionately impacting ethnic minorities. Those of the Black and minority ethnic (BME) groups are least likely to acquire valuable skills for the labour market, more likely to stay on low pay and limit their

opportunities to access higher wages (Department for Business, Energy and Industrial Strategy, 2017). For Bristol, this has been a prominent issue before the start of the pandemic. In particular, those of Black African descent in Bristol face the most difficulty accessing employment opportunities and high levels of disadvantage in education compared to the UK national average (Runnymede, 2017). As expressed earlier, being on low pay may perpetuate lower career progression and salary growth due to an absence of (deemed) valuable skills to highly rewarded labour market participation. This is likely to lead to greater wage inequality in affluent cities such as Bristol. Although statistics show that wage inequality in Bristol is lower than both the UK and South West average, there are still significant wage disparities between the top and bottom 10 per cent of earners (Fox and Macleod, 2019). This reflects a polarised segmented racialised and feminised labour market, with low-paying jobs at the bottom including essential and personal services. This suggests that far more needs to be done in Bristol to address its skill gap, especially for ethnic minorities, improving career and wage progression to allow low-skilled workers to access highly rewarded jobs.

Could the COVID-19 recession tackle the core issue? The rhetoric behind the low-skilled worker.

An important aspect of structural change in the labour market is wages, notably for workers in low-pay jobs. The COVID-19 recession may be the mechanism needed to challenge the existing rhetoric behind the low-skilled worker, which is a barrier to a decent wage. In recent months, the pandemic has shown how much we rely on human skills associated with workers in low-paying occupations. Low skilled and paid workers have been critical to the Coronavirus response by risking their lives to deliver essential services to communities during the pandemic (OECD, 2020). This starts to challenge the 'low-skilled worker' rhetoric, as we can see that their skills are needed. This has also made us value their contributions to society more. This has been illustrated in a recent ICM poll that found that 64 per cent of the British public agreed that the crisis has made them value the low-skilled worker more in essential services such as care homes and shops (KCL, 2020). These previously unskilled workers in health and social care have now been named as key workers by the Government as they are critical (Cabinet Office, 2021). This is somewhat contradictory, considering that these are the same workers categorised as low-skilled and are in low-paying occupations disproportionately impacted by the COVID-19 pandemic (OECD, 2020). Despite this, the crisis could be the lever needed to

ensure frontline care workers receive a decent wage with the heightened respect for low-income workers most vulnerable (Cominetti, Gardiner and Kelly, 2020). Is this a short-term trend, or could this create long-term change?

At our current rate, it is unlikely that the effects of the Coronavirus pandemic will increase wages for workers in low-paying occupations. Despite the rhetoric behind the 'low-skilled worker' appearing to have changed, an advanced capitalist society is unlikely to change. The previous 2007-08 recession showed that global financial crises are built on a much greater disease, the cancer of contemporary capitalism (McMurtry, 2013). This is not simply a metaphor; it is very much reality. McMurtry (2013) central argument is that deregulated transnational money sequences have been left to self-multiply with the sole purpose of economic growth, serving private investors only. As an effect, it acts like cancer that overruns its human host and undermines the value and needs of its host (McMurtry, 2013). In the Government's pursuit of profit, maximisation comes falling profits and the over-accumulation of capital (McNally, 2011). In recessions, labour is replaced increasingly with machinery through large investments in technology to increase profit by keeping wages relatively low (ibid). This could explain why there has been a lack of welfare support for key workers who are often underpaid and in precarious employment (TUC, 2021).

In addressing the UK's productivity puzzle. It can be argued that financial crises directly entrench patterns of job polarisation by focusing on profit maximisation (Bryson and Forth, 2016). The 2007-08 financial crisis created a 'hysteresis' effect; recessions focus on reducing capital accumulation with the rise of technological innovation that has scarring effects on workers through job loss and disruptions to economic processes (ibid, p. 167). This raises a growing concern for the future of work in modern Britain, in light of the Coronavirus pandemic. Lockdown and social distancing measures have impacted 'non-essential' workers in health, retail and hospitality, leading to an increase in short-term unemployment rates (OECD, 2020). The pandemic's acceleration of digital technologies within the workplace has already impacted these workers. The demand for low-income and young workers labour has decreased and, as a result, have been disproportionately impacted by job losses (Adams-Prassl et al., 2020b). In times of crisis, this suggests that a focus on economic growth through productivity can disproportionately impact wages as governments primarily focus on profit maximisation. This has side effects for those more likely to be in precarious employment, typically young people

and low-skilled workers (TUC, 2021), further polarising the labour market. By ignoring the acceleration of automation in the workforce with the lack of welfare support with continued austerity measures, a new crisis of capitalism might form (McNally, 2011). Short-term unemployment rates may only be the tip of the iceberg, there are the greater risks of precarious employment and low wages post-COVID.

Linking to the issue of job quality, some argue that low pay is a direct effect of decisions made within the UK national government. Urban theorists and sociologists argue that the UK's neoliberal agenda has shaped our hourglass economy, associated with the shift towards a knowledge-intensive economy (Lee et al., 2013). In the shrinking of the state's responsibility, attacks on trade unions and increased privatisation have led to rising wage inequality with relative income stagnation at the bottom half of the distribution (ibid). In terms of employment, the influence of trade unions and their collective bargaining force for low-skilled sectors was undermined by neoliberal policies, resulting in a less compressed wage structure (Biebricher and Johnson, 2012). The main issues are that neoliberalism's pursuit towards more economic and productivity growth leaves low wage workers in a 'poverty trap' (Standing, 2011). In turn, the UK's economy is now low-wage and skilled, further exacerbating the country's productivity puzzle. This is important because, according to Standing (2011), the emergence of a new 'precariat' population in society not only creates a lack of meaningful work-based identity but creates a huge gap which means there is no escape from low-paying jobs. This suggests that a focus on addressing the skills gap is the only plausible way to get workers away from a poverty trap and thus build a more productive economy that benefits more workers.

Bristol's One City Plan

Bristol's ambitious One City Plan was implemented in January 2019 to focus on sustainability (Fox and Macleod, 2019). These focus on set goals based on the UN's Sustainable Development Goals (SDGs) for the City to reach by 2050 (ibid). This paper will focus on one of its six themes: Economy, by examining both the One City Plan and its Economic Recovery and Renewal Strategy.

In Bristol's One City Plan, the City prides itself on its high levels of productivity across Europe and vast economic growth, valuing itself as *a city of hope and aspiration, where everyone can share in its success* (Bristol One City Plan, 2020a, p. 11). However, as discussed previously,

Bristol residents who are low-skilled and wage workers do not particularly benefit from its affluence and success. On a positive note, the plan recognises this issue. By 2050, it aims to ensure that its residents are supported with the learning and skills required to succeed in adulthood (Bristol One City Plan, 2020a). This focuses on improving employment pathways and building skills into the labour market for disadvantaged social groups (Bristol One City Plan, 2020b). Especially important, as seen in the Covid-19 crisis, which brought the acceleration of technological change driving workers. The crisis showed the importance of increasing digital connectivity in the City, which meant tackling the digital divide between technology, access and skills (Lockwood, 2020). Therefore, it is excellent to see investing to address the digital divide as a priority for helping people and the labour market. Crucial to ensuring that residents are excluded from pathways to sustainable and good quality jobs due to a lack of digital skills (which are becoming increasingly important in the labour market).

In our post-COVID economic recovery, Bristol needs to build back better. As discussed earlier, regarding employment and building valuable skills, improving job quality for our low-skilled workers are essential. The City has identified the complex nature of the issue, not simply protecting employment levels. By taking a systems approach to solving the City's core issues with the cross-sector collaboration with different partners across the City (Bristol One City, 2020a). Therefore, it is great to see in the Economic Recovery and Renewal Strategy that Bristol is committed to becoming a Living Wage city. This focuses on reducing the percentage of workers earning less than the living wage and its residents' dependent on precarious employment, as well as an expansion in investment in workplace training (Bristol One City Plan, 2020b, pp. 26). Concerning providing residents with a decent wage, there appears to be a positive change made already. By 2030, Bristol organisations aim to more than double the number of accredited Living Wage employees, meaning that over 40,000 employees will pay their staff the real Living Wage of £9.30 (Bristol One City Plan, 2021; pp. 13). This is positive as the real Living wage considers the costs of living for staff and their families compared to the national minimum (Living Wage Foundation, n.d.). This suggests that Bristol is putting measures to ensure real social change is made in addressing those at the bottom of the labour market.

While the One City Plan appears to be taking a positive step forward, this does not come without criticism. Some argue that in a country where political change has mainly been

centralised within the national government, this ambitious local initiative is unlikely to make much difference (Hambleton, 2018). Austerity policies have dramatically cut the financial support towards local areas, severely restricting the council's ability to collect funds through local taxation (Latham, 2017). For Bristol, the central government's financial, budgetary assistance for the Bristol City Council was cut from £201 million in 2010-11 to £45 million in 2019-20, an alarming 78 per cent reduction less than a decade (Hambleton, 2020; pp. 127). This suggests that although it is a bold initiative for change, it is unlikely that many of its priorities will be met. At the same time, proponents of the One City Plan argue that change can be made locally. As more cities adopt more egalitarian policymaking strategies, increasing the collective power of the people could challenge decision-making on a national level (Hambleton, 2018). As partners across the City, this seems optimistic, from business to academia, collaborating to deliver positive economic changes through the One City Plan (Bristol One City Plan, 2020a). The creative collaboration of different stakeholders locally could have the power to address the national issues of wage inequality and job quality.

Future goals for the *Bristol One City Plan*

Affluent cities with high productivity levels, such as Bristol, should ensure that their focus is not mainly on a small number of high-skilled sectors. At the current rate, low-skill industries will continue to supply a significant number of low-wage jobs. Therefore, local areas should focus on allowing for career and wage progression for low-wage workers, and for those who remain in this work should be protected from relative poverty.

Supply-side factor: Universal Basic Income (UBI)

Although Bristol's 30-year One City Plan is an ambitious one and work is being done towards tackling low wages to become a Living Wage City. However, a key concern is that a living wage is dependent on employers voluntarily choosing to pay their employees a real living wage. As in pursuit of profit-making, businesses could keep wages low and underpay their employees (McNally, 2011). In terms of addressing long-term low wages, we should not stop short of more radical change in the future for Bristol residents. Since the start of the COVID-19 pandemic, there has been increasingly positive support for implementing a guaranteed Universal Basic Income (UBI). With 71 per cent of Europeans across all age groups now

favouring its introduction (Ash and Zimmermann, 2020). We should make a case for radical change in the implementation of the UBI in Bristol.

The term 'Universal Basic Income' or 'UBI' is used by Van Parijs (2004; pp. 8) to refer to 'an income paid by a political community to all its members on an individual basis, without means test or work requirement'. This universal payment would redistribute wealth. Proponents say that this would alleviate poverty and wage inequality, fostering social justice for the workforce (Standing, 2002). However, this approach does not come without its criticism. Despite its advantages, the UBI could disincentivise work and could fail to alleviate poverty. A basic income could be spent on non-essential items and limit labour market participation, harming the UK economy and avoiding addressing relative poverty levels (citation, year). A common criticism is the financial costs, as it is often argued to be unaffordable to provide a decent wage for all and necessitate raising national taxes to untenable levels (Goulden, 2018). The cost of UBI is an estimated value of £67-75 billion or 3.4 per cent of GDP for the UK (Widerquist and Arndt, 2020). In favourable terms, this is a small concern as it only accounts for 10 per cent of the UK overall budget spending and its advantage in poverty alleviation. In terms of labour market participation, implementing a UBI also recognises most of the unpaid labour workforce in domestic work services, disproportionately affecting women (Williams and Srnicek, 2013). This suggests that UBI implementation could be a great solution in tackling poverty and labour market participation in a time of technological change.

Solutions for Bristol:

Overall, offering a UBI to Bristol residents might allow for an opportunity for greater labour market participation. A UBI might allow for reduced working hours, which could encourage low-skilled employees to progress in their careers by concentrating on acquiring valuable skills (Painter et al., 2018). Alternatively, it could allow them to enter entrepreneurship with extra time to develop a new business concept or idea (ibid). This would be a great way to tackle the skills gap and low wages with the opportunity to train and upskill its workforce in an increasingly polarised labour market.

However, acknowledging criticism for UBI, we could utilise solutions to tackling the issues of disincentivising work and failing to tackle poverty alleviation in Bristol. Surprisingly absent from the Bristol One City Plan, was the Bristol Pound (£) scheme. The UBI could be given in Bristol pounds and used for services that fulfil basic human wellbeing and needs. This could

be spent on services such as council tax, housing and spending in independent shops which would remain in Bristol and would provide an opportunity to further resource the upskilling of its low-skilled workforce. This would encourage people to upskill themselves (with the added time that the UBI would offer) to increase their upward mobility into higher-paid and skilled sectors. The increased wages would be a good incentive, as this could be used as spending on more luxurious items (that the modified UBI would not be used for).

On an additional note, as expressed earlier, we should acknowledge unpaid labour work. A radical approach needs to be used to address unpaid domestic work, e.g., housework which disproportionately falls onto women as a care income. Bristol is a progressive city, and in some ways, the Bristol One City plan is radical. It could make some steps in acknowledging housework as valuable, paid work essential to creating our future labour force and tackling further inequalities.

Demand-side factor: Local active labour market policies (job matching)

The Bristol One City Plan has outlined some practical goals towards tackling supply-side factors in addressing the issues associated with job polarisation. However, supply-side policies do not suffice to solve the issues that local cities are facing. According to Clayton et al. (2014), demand-side factors, such as job matching strategies, are also needed to tackle the issue. Evidence finds that employees transitioning into overqualified jobs can have a more negative economic effect. In times of recessions, this might have a more permanent impact lasting over a decade compared to periods of unemployment (ibid). Therefore, this could be a greater concern than temporary unemployment. It is vital to ensure that employees are in the appropriate job roles that match their skillset.

Active labour market policies are needed to help appropriately match these workers and re-integrate them into the Bristol labour market. Evidence from the What Works Centre for Local Economic Growth (2020) suggests, especially during times of recovery from recession, should focus on integrating active policies, e.g., the Kickstart scheme (focused on training the labour force subsidised jobs with a 'skill compact'). This already appears to have a positive long-term impact on employment (ibid). Therefore, we should establish national policies that can help maximise the uptake of existing active labour policies with a 'skills compact' on a local level in Bristol. These can be used alongside employer initiatives to support the career progression and on-the-job learning of its workforce.

Conclusion

In this paper, the focus was on the influence of technological change on local level employment. Technological advancement in automation has increasingly transformed the workplace, especially with the rise of remote and flexible work due to the Coronavirus pandemic. Pre-Covid, the adoption of automated technologies in business had been marked with the potential to create a more productive UK economy that benefits our workforce (Purdy and Daugherty, 2017). However, academic literature examining the economic phenomenon, job polarisation, suggests the rise of automation can further exacerbate present issues within the labour market. Indeed, a widely cited consequence of automation is the job displacement of mid-skill workers, further dividing an increasingly polarised labour market. However, it is essential to note that the research also argues that this is a greater issue than temporary unemployment. Beneath the surface level, this is an issue of job quality and low wages with the expansion of low-skilled workers at the bottom of bifurcating labour market.

This has left local policymakers with a conundrum about how they become productive cities with the rise of automation (which favours and strives off high-skilled employment most) whilst tackling the disproportionate effects left on low-skilled and wage workers. In particular, they are increasingly being valued due to their crucial ownership as key workers in our national COVID-19 recovery. Surprisingly, much of the existing knowledge of job polarisation is on a national scale. This paper contributes to understanding its impact on wage inequalities due to skills more research needs to be conducted on a local scale. This is needed to address the issues of job quality and low wages. The most conclusive argument found explaining increasing levels of wage inequality was on a local city level. Since urban wage inequality is often motivated by affluence in local neighbourhoods (Lee et al., 2013). This suggests a direct need to tackle these issues in cities, as these contribute to the UK's high levels of wage inequality and its 'productivity puzzle'.

Whilst on the surface level, Bristol appears to be an affluent, productive technology hub powered by a high-skilled labour force as a great contributor to wealth. Some have described it as a 'tale of two cities' regarding social and wage inequality. However, with the ambitious One City plan, an impressive start has been made to address issues impacting labour market participation. This strategy covers most bases in focusing on employment levels, building skills for disadvantaged groups and creating more opportunities for better quality jobs. In particular,

Bristol has done great work in addressing the low wages associated with low-skilled work to become a Living Wage city. In the future, Bristol should strive towards more radical change. This paper has presented a future goal: the implementation of Universal Basic Income, which acknowledges unpaid labour and low wages. This is key to tackling the long-standing negative rhetoric behind the low-skilled worker, a critical barrier to a decent wage and an equal society. Overall, Bristol is a progressive city that acknowledges that more needs to be done to tackle the issues affecting our people and the labour market. With the One City Plan, I believe this is an excellent first step, and as a community, we can work together to create radical social change. In some ways, the Coronavirus pandemic has not been all damaging. It has shown us the importance of low-skilled workers and the issue with an increasingly diving labour market that leaves them at the bottom. This paper has several important implications for the future of work within a local labour market context. In particular, the importance of challenging the harmful rhetoric behind the low-skilled work during post-COVID recovery. Indeed, this has demonstrated the importance of building back our cities, taking ownership in creating an equal labour market with career and wage progression opportunities as we all are essential to national productivity and economic levels.

References

- Acemoglu, D. and Autor, D., 2011. Skills, tasks and technologies: Implications for employment and earnings. In: D. Card and O. Ashenfelter, eds. *Handbook of Labor Economics*. [e-book] Elsevier. Pp.1043-1171. Available at: <https://www.sciencedirect.com/science/article/pii/S0169721811024105?casa_token=3oPrLmPGVW8AAAAA:w0bZm5LL6xR4bJh7WBWCgmV9DCw4Z0u1VSBbPsVG1tF4oxSOmGokU4se_yHxjB9VnfMaahrt> [Accessed 17 December 2020].
- Acemoglu, D. and Restrepo, P., 2018. Low-skill and high-skill automation. *Journal of Human Capital*, [e-journal] 12(2), pp.204-232. Available at: <https://www.journals.uchicago.edu/doi/pdf/10.1086/697242?casa_token=fxxn4nKM_a4AA%3A_OW_kVQITdcSZDh_1vIMxP_vJN2cScZMdJEE5-HAkscvPEQcNVA7CI6raeoJPN8cXy2Wa01LA&> [Accessed 5 January 2021].
- Adams-Prassl, A., Boneva, T., Golin, M. and Rauh, C., 2020a. *Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys*. [pdf] Bonn, Germany: IZA. Available at: <<http://ftp.iza.org/dp13183.pdf>> [Accessed 29 January 2021].
- Adams-Prassl, A., Boneva, T., Golin, M. and Rauh, C., 2020b. *Inequality in the Impact of the Coronavirus Shock: New Survey Evidence for the UK*. [pdf] Bonn, Germany: IZA. Available

at: <<https://www.econ.cam.ac.uk/research-files/repec/cam/pdf/cwpe2023.pdf>> [Accessed 29 January 2021].

Ash, T.G. and Zimmermann, A., 2020. In Crisis, Europeans Support Radical Positions Climate Change and Social Welfare issues most salient. [pdf] eupinions. Available at: <http://aei.pitt.edu/102728/1/eupinions_brief_In_Crisis_Europeans_Support_Radical_Positions.pdf> [Accessed 12 April 2021].

Autor, D. and Salomons, A., 2017. Does productivity growth threaten employment? [pdf] Sintra, Portugal: ECB Forum on Central Banking. Available at: <<http://pinguet.free.fr/autorsalomons617.pdf>> [Accessed 20 January 2021].

Autor, D., 2010. The polarization of job opportunities in the US labor market: Implications for employment and earnings. *Center for American Progress and The Hamilton Project*, [e-journal] 6, pp.11-19. Available at: <<https://economics.mit.edu/files/5554>> [Accessed 20 January 2021].

Autor, D.H., Dorn, D. and Hanson, G.H., 2013. *The Geography of Trade and Technology Shocks in the United States*. [pdf] Cambridge, MA: National Bureau of Economic Research. Available at: <https://www.nber.org/system/files/working_papers/w18940/w18940.pdf> [Accessed 15 December 2020].

Autor, D.H., Levy, F. and Murnane, R.J., 2003. The skill content of recent technological change: an empirical exploration. *Q. J. Econ.*, [e-journal] 118(4), pp.1279-1333. Available at: <<https://academic.oup.com/qje/article/118/4/1279/1925105>> [Accessed 10 December 2020].

Bell, D. and Blanchflower, D.G., 2009. What Should Be Done about Rising Unemployment in the UK? [pdf] Bonn, Germany: IZA. Available at: <<https://www.econstor.eu/bitstream/10419/35409/1/595037216.pdf>> [Accessed 28 January 2021].

Biebricher, T. and Johnson, E.V., 2012. What's wrong with neoliberalism?. *New Political Science*, [e-journal] 34(2), pp.202-211. Available at: <https://www.tandfonline.com/doi/full/10.1080/07393148.2012.676398?casa_token=3APbMa1dqI4AAAAA:riieFAIRSIxLu1yVyi51c0kgileQ0bb0BdvcVawXaQVCPdvnEyByrlqe-KJVjimY1Uu6ZcncrZtM> [Accessed 10 April 2021].

Brewer, M., Dickerson, A., Gambin, L., Green, A., Joyce, R. and Wilson, R., 2012. *Poverty and Inequality in 2020: Impact of Changes in the Structure of Employment*. [pdf] London: JRF. Available at: <<file:///Users/tianafrancis/Downloads/employment-inequality-income-full.pdf>> [Accessed 10 February 2021].

Bristol One City Plan, 2020a. *One City Plan 2020: A Plan for Bristol to 2050*. [pdf] Bristol: Bristol One City. Available at: <https://www.bristolonecity.com/wp-content/uploads/2020/01/One-City-Plan_2020.pdf> [Accessed 1 January 2021].

Bristol One City Plan, 2020b. *A One City: Economic Recovery and Renewal Strategy*. [pdf] Bristol: Bristol One City. Available at: <<https://www.bristolonecity.com/wp->

[content/uploads/2020/10/One-City-Economic-Recovery-Plan-At-a-glance.pdf](#)> [Accessed 1 January 2021].

Bristol One City Plan, 2021. *One City Plan 2021: A Plan for Bristol to 2050*. [pdf] Bristol: Bristol One City. Available at: <<https://www.bristolonecity.com/wp-content/uploads/2021/04/Bristol-One-City-Plan-2021-2050.pdf>> [Accessed 18 April 2021].

Bryson, A. and Forth, J., 2016. The UK's Productivity Puzzle. In: P. Askenazy, L. Bellmann, A. Bryson. And E. Galbis, eds. 2016. *Productivity Puzzles Across Europe*. Oxford: Oxford University Press. Ch. 5.

Cabinet Office, 2021. *Children of critical workers and vulnerable children who can access schools or educational settings*. [online] London: Cabinet Office. Available at: <<https://www.gov.uk/government/publications/coronavirus-covid-19-maintaining-educational-provision/guidance-for-schools-colleges-and-local-authorities-on-maintaining-educational-provision>> [Accessed 2 January 2021].

Centre for Cities, 2018. *The wrong tail: Why Britain's 'long tail' is not the cause of its productivity problems*. [pdf] London: Centre for Cities. Available at: <<https://www.centreforcities.org/wp-content/uploads/2018/05/2018-06-05-The-wrong-tail.pdf>> [Accessed 24 February 2021].

Chetty, R., Friedman, J., Hendren, N. and Stepner, M., 2020. *The economic impacts of COVID-19: Evidence from a new public database built from private sector data*. [pdf] National Bureau of Economic Research. Available at: <<https://fairmodel.econ.yale.edu/ec438/chetty1.pdf>> [Accessed 11 February 2021].

Clarke, S. and Cominetti, N., 2019. *Setting the record straight: How record employment has changed the UK*. [pdf] London: Resolution Foundation. Available at: <<https://www.resolutionfoundation.org/app/uploads/2019/01/Setting-the-record-straight-full-employment-report.pdf>> [Accessed 3 February 2021].

Clayton, N., Williams, M. and Howell, A., 2014. *Unequal opportunity: how jobs are changing in cities*. [pdf] London: Centre for Cities. Available at: <<https://www.centreforcities.org/wp-content/uploads/2014/09/14-09-01-Unequal-Opportunity.pdf>> [Accessed 10 April 2021].

Cominetti, N., Gardiner, L. and Kelly, G., 2020. *What happens after the clapping finishes?* [pdf] Available at: <<https://www.resolutionfoundation.org/app/uploads/2020/04/Care-workers-spotlight.pdf>> [Accessed 15 February 2021].

Davis, D., Mengus, E. and Michalski, T., 2020. Labor Market Polarization and the Great Divergence: Theory and Evidence. *NBR Working Paper No. 26955*, National Bureau of Economic Research.

Department for Business, Energy and Industrial Strategy, 2017. *Race in the workplace: The McGregor-Smith Review*. [pdf] Department for Business, Energy and Industrial Strategy. Available at:

<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/594336/race-in-workplace-mcgregor-smith-review.pdf> [Accessed 16 April 2021].

Fox, S. and Macleod, A., 2019. *Bristol and the SDGs: A Voluntary Local Review of Progress 2019*. [pdf] Bristol: University of Bristol. Available at: <<https://core.ac.uk/download/pdf/237413698.pdf>> [Accessed 12 April 2021].

Frank, M.R., Autor, D., Bessen, J.E., Brynjolfsson, E., Cebrian, M., Deming, D.J., ... and Rahwan, I., 2019. Toward understanding the impact of artificial intelligence on labor. *Proceedings of the National Academy of Sciences*, [e-journal] 116(14), pp.6531-6539. Available at: <<https://www.pnas.org/content/pnas/116/14/6531.full.pdf>> [Accessed 9 April 2021].

Frey, C.B. and Osborne, M., 2013. *The Future of Employment: How Susceptible are Jobs to Computerisation?* [pdf] Oxford: Oxford Martin Programme of Technology and Employment. Available at: <<https://www.oxfordmartin.ox.ac.uk/downloads/academic/future-of-employment.pdf>> [Accessed 23 February 2021].

Glaeser, E.L. and Resseger, M.G., 2010. The Complementarity Between Cities and Skills. *Journal of Regional Science*, [e-journal] 50(1), pp.221-244. Available at: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1467-9787.2009.00635.x?casa_token=jTHGPEfRey4AAAAA:b6mk4spprkEXkOw4hMBR9ReGSbNIS2GKwX8AVvy9JMbE8kEoPzPKVL1szOE44RqGyrqw7p12QYx> [Accessed 10 April 2021].

Goos, M. and Manning, A., 2003. McJobs and MacJobs: The growing polarisation of jobs in the UK. In: R. Dickens, P. Gregg and J. Wadsworth, eds. *The Labour Market Under New Labour*. London: Palgrave Macmillan. Pp.70-85.

Goos, M. and Manning, A., 2007. Lousy and lovely jobs: the rising polarization of work in Britain. *Rev. Econ. Stat.*, [e-journal] 89(1), pp.118-133. Available at: <<https://direct.mit.edu/rest/article/89/1/118/57634/Lousy-and-Lovely-Jobs-The-Rising-Polarization-of>> [Accessed 1 December 2020].

Goos, M., Manning, A. and Salomons, A., 2009. Job Polarization in Europe. *American Economic Review*, [e-journal] 99(2), pp. 58-63. Available at: <<https://www.aeaweb.org/articles?id=10.1257/aer.99.2.58>> [Accessed 1 December 2021].

Goos, M., Manning, A. and Salomons, A., 2014. Explaining Job Polarization: Routine-Biased Technological Change and Offshoring. *American Economic Review*, [e-journal] 104(8), pp. 2509-2526. Available at: <<https://personal.lse.ac.uk/manning/work/ExplainingJobPolarization.pdf>> [Accessed 1 January 2021].

Goulden, C., 2018. Universal Basic Income – not the answer to poverty. Joseph Rowntree Foundation [blog] 25 April. Available at: <<https://www.jrf.org.uk/blog/universal-basic-income-not-answer-poverty>> [Accessed 13 April 2021].

Green, A., Atfield, G. and Purcell, K., 2016. Fuelling displacement and labour market segmentation in low-skilled jobs? Insights from a local study of migrant and student employment. *Environment and Planning A*, [e-journal] 48(3), pp.577-593. Available at: <https://journals.sagepub.com/doi/pdf/10.1177/0308518X15614327?casa_token=X1Ipa8dLF_kAAAAA:N7TGP0C_FxVN5OAhO1cWXQcPxgmpVsOM_ChJ0RmLYsjobRRKm39fAeH7Nr91ECR_4Iw25ED5AOw> [Accessed 12 April 2021].

Hambleton, R., 2018. *Inclusive Place-Based Leadership: Lesson-Drawing from Urban Governance Innovations in Bristol, UK*. [online] Metropolitics. Available at: <<https://metropolitics.org/Inclusive-Place-Based-Leadership-Lesson-Drawing-from-Urban-Governance.html>> [Accessed 18 April 2021].

Hambleton, R., 2020. *Cities and Communities Beyond COVID-19: How local leadership can change our future for the better*. [e-book] Bristol: Bristol University Press. Available through: UoB Library website <<https://www.cambridge.org/core/books/cities-and-communities-beyond-covid19/87602BA8D22FFC7FD6271C67A75E9B31>> [Accessed 1 April 2021].

Holmes, C. and Mayhew, K., 2012. *The Changing Shape of the UK job market and its implications for the bottom half of earners*. [pdf] London: Resolution Foundation. Available at: <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.400.8806&rep=rep1&type=pdf>> [Accessed 16 December 2020].

Holmes, C. and Tholen, G., 2013. Occupational Mobility and Career Paths in the 'Hourglass' Labour Market. SKOPE Research Paper No. 113. Oxford: University of Oxford.

Holmes, C., 2010. Job Polarisation in the UK: An Assessment Using Longitudinal Data, SKOPE Research Paper No. 90. Oxford: University of Oxford.

Joyce, R. and Xu, X., 2020. *Sector shutdowns during the coronavirus crisis: which workers are most exposed?* [pdf] London: IFS. Available at: <<https://www.ifs.org.uk/uploads/BN278-Sector-Shutdowns.pdf>> [Accessed 28 January 2021].

KCL, 2020. *Two-thirds of Britons value 'low-skilled' workers more since Covid-19 crisis*. [online] Available at: <<https://www.kcl.ac.uk/news/two-thirds-of-britons-value-low-skilled-workers-more-since-covid-19-crisis>> [Accessed 20 February 2021].

Latham, P., 2017. *Who stole the town hall?: The end of local government as we know it*. [e-book] Bristol: Bristol University Press. Available through: UoB Library website <<https://www-jstor-org.bris.idm.oclc.org/stable/j.ctt1t89b2k>> [Accessed 7 April 2021].

Lee, N., Sissons, P. and Jones, L., 2013. *Wage inequality and employment polarisation in British cities*. [pdf] London: Work Foundation. Available at: <[file:///Users/tianafancis/Downloads/Wage-inequality-and-employment-polarisation-in-british-cities%20\(17\).pdf](file:///Users/tianafancis/Downloads/Wage-inequality-and-employment-polarisation-in-british-cities%20(17).pdf)> [Accessed 24 February 2021].

Living Wage Foundation, n.d. *What is the real living wage?* [online] Living Wage Foundation. Available at: <<https://www.livingwage.org.uk/what-real-living-wage>> [Accessed 18 April 2021].

Lockwood, F., 2020. Bristol's smart city agenda: vision, strategy, challenges and implementation. *IET Smart Cities*, [e-journal] 2(4), pp.208-214. Available at: <<https://ietresearch.onlinelibrary.wiley.com/doi/full/10.1049/iet-smc.2020.0063>> [Accessed 10 April 2021].

Magrini, E., 2020. How will Coronavirus affect jobs in different parts of the country? Centre for Cities. [blog] 17 March. Available at: <<https://www.centreforcities.org/blog/how-will-coronavirus-affect-jobs-in-different-parts-of-the-country/>> [Accessed 17 January 2021].

Mazzolari, F. and Ragusa, G., 2013. Spillovers from high-skill consumption to low-skill labor markets. *Review of Economics and Statistics*, [e-journal] 95(1), pp.74-86. Available at: <https://watermark.silverchair.com/rest_a_00234.pdf?token=AQECAHi208BE49Oan9kKhW> [Accessed 9 April 2021].

McIntosh, S., 2013. *Hollowing out and the future of the labour market*. [pdf] London: Department for Business Innovation and Skills. Available at: <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/250206/bis-13-1213-hollowing-out-and-future-of-the-labour-market.pdf> [Accessed 10 March 2021].

McMurtry, J., 2013. *The Cancer Stage of Capitalism: From Crisis to Cure*. 2nd ed. [e-book] London: Pluto Press. Available through: UoB Library website <<https://ebookcentral.proquest.com/lib/bristol/detail.action?docID=3386728>> [Accessed 20 February 2021].

McNally, D., 2011. *Global Slump: The Economics and Politics of Crisis and Resistance*. Oakland, CA: PM Press (Spectre).

Mishel, L., Schmitt, J. and Shierholz, H., 2013. Assessing the job polarization explanation of growing wage inequality. Economic Policy Institute Working Paper.

Nomis, 2020. Labour Market Profile – Nomis – Official Labour Market Statistics. [online] Available at: <<https://www.nomisweb.co.uk/reports/lmp/la/1946157348/report.aspx#tabempocc>> [Accessed 10 April 2021].

OECD, 2020. *The impact of the COVID-19 pandemic on jobs and incomes in G20 economies*. [pdf] OECD. Available at: <https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_756331.pdf> [Accessed 10 March 2021].

ONS, 2015. *What is the productivity puzzle?* [online] ONS. Available at: <<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/whatistheproductivitypuzzle/2015-07-07>> [Accessed 24 February 2021].

ONS, 2019. *Productivity economic commentary: January to March 2019*. [online] ONS.

Available at :

<<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/ukproductivityintroduction/januarytomarch2019#the-productivity-puzzle-and-the-lost-potential-5000-in-wages>> [Accessed 24 February 2021].

Painter, A., Thorold, J. and Cooke, J., 2018. Pathway to Universal Basic Income: The case for a Universal Basic Opportunity Fund. [pdf] RSA. Available at:

<https://www.thersa.org/globalassets/pdfs/reports/rsa_pathways-to-universal-basic-income-report.pdf> [Accessed 15 April 2021].

Palomino, J.C., Rodriguez, J.G. and Sebastian, R., 2020. Wage Inequality and poverty effects of lockdown and social distancing in Europe. *INET Oxford Working Paper No. 2020-13*. Europe: European Economic Review.

Purdy, M. and Daugherty, P., 2017. *How AI Boosts Industry Profits and Innovation*. [pdf]

London: Accenture. Available at: <<https://www.accenture.com/fr-fr/acnmedia/36dc7f76eab444cab6a7f44017cc3997.pdf>> [Accessed 3 March 2021].

Runnymede, 2017. Bristol: a city divided? *Ethnic Minority disadvantage in Education and Employment*. [pdf] London: Runnymede.

<<https://www.runnymedetrust.org/uploads/CoDE%20Briefing%20Bristol%20v2.pdf>> [Accessed 9 April 2021].

Salvatori, A., 2015. *The Anatomy of Job Polarisation in the UK*. IZA Discussion Papers.

Available at: <<http://ftp.iza.org/dp9193.pdf>> [Accessed 10 December 2020].

Salvatori, A., 2018. The Anatomy of Job Polarisation in the UK. *J Labour Market Res*, [e-journal] 52(8). Available at:

<<https://labourmarketresearch.springeropen.com/articles/10.1186/s12651-018-0242-z>> [Accessed 3 December 2020].

Standing, G., 2002. *About Time: Basic Income Security as a Right*. [pdf] Geneva:

International Labour Office. Available at:

<<https://basicincome.org/bien/pdf/2002Standing2.pdf>> [Accessed 16 April 2021].

Standing, G., 2011. *The Precariat: The New Dangerous Class*. London: Bloomsbury Academic.

TalkTalk, 2020. *Lockdown Lessons Report*. [pdf] London: TalkTalk. Available at:

<[file:///Users/tianafrancis/Downloads/TalkTalk's%20Lockdown%20Lessons%20Report%202020%20\(1\).pdf](file:///Users/tianafrancis/Downloads/TalkTalk's%20Lockdown%20Lessons%20Report%202020%20(1).pdf)> [Accessed 25 February 2021].

TUC, 2021. Covid-19 and Insecure Work. [pdf] London: TUC. Available at:

<<https://www.tuc.org.uk/research-analysis/reports/covid-19-and-insecure-work>> [Accessed 15 April 2021].

- Van Parijs, P., 2004. Basic income: a simple and powerful idea for the twenty-first century. *Politics & Society*, [e-journal] 32(1), pp.7-39. Available at: https://journals.sagepub.com/doi/pdf/10.1177/0032329203261095?casa_token=cvtKqGgOFmMAAAAA:fbugieBVaUn9ZZszPtsJBYoSMd0zKYmTHu9iwnp3wtWN18ek-OVomFDkzvhQdqZgTG2l9tOxqZI [Accessed 10 April 2021].
- Webber, D.J., Danford, A., Gray, S., Orme, J. and Tailby, S., 2012. *Income inequality, employment and health in Bristol: A spatial analysis*. [pdf] Bristol: Bristol City Council. Available at: <https://www.bristol.gov.uk/documents/20182/33203/Income,%20inequality,%20employment%20and%20health%20in%20Bristol%20a%20spacial%20analysis,%20University%20of%20West%20of%20England,%202012.pdf/4d783df2-3381-4454-9c13-62673de6be50> [Accessed 12 April 2021].
- What Works Centre for Local Economic Growth, 2020. *Local responses to youth unemployment and scarring*. [pdf] London: What Works Centre for Local Economic Growth. Available at: https://whatworksgrowth.org/public/files/Policy_Reviews/COVID_19_Local_responses_to_Youth_Scarring.pdf [Accessed 12 April 2021].
- Widerquist, K. and Arndt, G., 2020. The Cost of Basic Income in the United Kingdom: A Microsimulation Analysis.
- Williams, A. and Srnicek, N., 2013. *#ACCELERATE MANIFESTO for an Accelerationist Politics*. [online] CLT. Available at: <https://criticallegalthinking.com/2013/05/14/accelerate-manifesto-for-an-accelerationist-politics/> [Accessed 15 April 2021].