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MAKEuk

MANUFACTURING: PERCEPTIONS v REALITY

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Five years ago, Make UK surveyed the British public for their views about the industry we represent. The results didn't paint the UK manufacturing sector in a good light, with many respondents expressing outdated views about modern manufacturing, saying they viewed the sector as dirty and dangerous, poorly paid, and with limited career opportunities. It was clear that our sector needed to do a lot more to update the understanding and image of modern manufacturing and help the public to see what we see, a dynamic, inspiring, and innovative industry.

Nobody could have foreseen the extraordinary events that would unfold over the following five years to confront our sector and wider UK society with unprecedented challenge.

The destabilisation of public policy and economic outcomes that followed the UK's exit from the EU created major uncertainty for businesses. Adjusting to new trading rules with the EU and the increased costs and bureaucracy that have made it more difficult for businesses to export their goods.

Then the Covid-19 pandemic brought widespread disruption to international supply chains, as factories, ports and entire countries were locked down and workers forced to stay home. The consequences of Covid-19 caused stock shortages of raw materials and key components which, in turn, led to production delays and cancellations. The pandemic also disrupted demand for manufactured goods, as consumer spending patterns changed.

Almost every aspect of modern life was influenced in some way by the birth of British industry and, while we might have come to believe in recent years that "we don't make anything in this country any more", the Covid-19 crisis showed the importance of our industrial base to maintaining our national prosperity and wellbeing.

FOREWORD

Through ingenuity and innovation, UK manufacturers were at the forefront of the fight to stop the spread of COVID-19 and build back better. Automotive makers switched to building ventilators for our NHS, clothing and textile companies repurposed to make medical gowns and facemasks, whilst food and drink factories made hand sanitisers and ensured our household supplies could continue, whilst pharmaceutical companies made the medicines and vaccines that saved thousands of lives.

In 2018, the British public said that media coverage of manufacturing was declinist and negative, with few positive articles ever published. The last five years have brought transformative change to how the UK operates, the pandemic demonstrated the strength of UK manufacturers, which encouraged more positive press coverage of UK manufacturing. This year Make UK's public perceptions survey found that an overwhelming 93% of respondents say they believe manufacturing is important to the UK economy and over three-quarters see manufacturing as delivering solutions today to address the challenges of tomorrow.

While, of course, some survey respondents have maintained their old views that manufacturing jobs are bad and boring, these are now in the minority. Increasingly, the British public see manufacturing as

what it truly is – a vibrant, high-skill, high-wage, high-tech sector.

The public is right to recognise the revolution taking place in UK factories. Manufacturers are the creators, innovators, and makers digitalising their production processes, driving energy efficiency and developing green technologies to help play their part in the race against climate change, all while creating more and better paid jobs across every region.

Seven in ten members of the public say it's important to buy British goods. We agree. We make many high-quality goods here in Britain already, and we can make even more. The UK manufacturing sector is an essential contributor to the country's economy, generating £206bn gross value added in 2022, a fifth higher than a decade ago. The UK has moved up one place in the global rankings and is now the eight largest manufacturing economy in the world. Manufacturing accounts for around half of all UK exports, two thirds of spending on research & development, and despite accounting for just 9% of the overall economy (GVA) and 8% of total employment, it contributes 15% of total UK business investment. The sector employs around 2.6m highly skilled people across the UK, mostly in areas that need levelling up, and pays salaries typically 12% above the regional average. In short manufacturing matters massively to the prosperity and security of the UK.

ORD

KEY STATS



THEN¹:




8 IN 10

MEMBERS OF THE PUBLIC
WANTED THE GOVERNMENT TO PUT A
GREATER FOCUS ON
MANUFACTURING

7 IN 10 AGREED

THAT A STRONG MANUFACTURING BASE
WAS ESSENTIAL TO TACKLE
FUTURE CHALLENGES

7 IN 10 ALSO
FELT
MANUFACTURING WAS
ESSENTIAL IN A
POST BREXIT WORLD

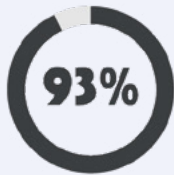


THE PUBLIC BELIEVED
BRITAIN WAS THE
56TH
MANUFACTURING NATION
IN THE WORLD
WHEN IN REALITY IT WAS 9TH

JUST 1 IN 5 PARENTS
WANTED THEIR CHILD
TO WORK IN MANUFACTURING

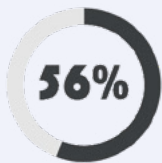


TODAY²:



OF PEOPLE BELIEVE
UK MANUFACTURING IS IMPORTANT
FOR UK PROSPERITY

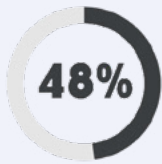
THE PUBLIC PLACE
BRITAIN AS THE 43RD MANUFACTURING NATION BUT ACTUALLY WE ARE **8TH**



OF PEOPLE THINK THEIR
LOCAL AREA
WOULD BE WORSE OFF
WITHOUT MANUFACTURING JOBS

2 IN 5 PARENTS WOULD ENCOURAGE
THEIR CHILD TO WORK IN MANUFACTURING

A FURTHER **43% WOULD DO**
DEPENDING ON THE TYPE OF JOB OR ROLE



OF PEOPLE BELIEVE
WORKING IN MANUFACTURING IS A PRESTIGIOUS CAREER

COMPARED TO 28% WHO DON'T



TOMORROW:

OVER 3/4s OF THE PUBLIC THINK WE **NEED A STRONG MANUFACTURING BASE** TO INCREASE THE **UK'S RESILIENCE** AND PREPARE FOR FUTURE CHALLENGES

INCREASING MANUFACTURING GDP FROM



WOULD ADD **£142BN TO THE UK ECONOMY**

7 IN 10 BRITS FEEL IT IS **IMPORTANT**

TO BUY BRITISH PRODUCTS



OVER 1/2 CHILDREN SAID THEY HAVEN'T CONSIDERED **A CAREER IN MANUFACTURING**

COMPARED TO **1/3**



WHO HAVE

¹Make UK (then EEF)/WBD, Perceptions Survey (2018)
²Make UK/Sheffield Hallam University, Perceptions Survey (2023)

5 YEARS AGO: A RECAP

Remember 2018? The year Prince Harry married Meghan Markle, Theresa May's Chequers Agreement, the Gatwick Airport drone disruptions, and the introduction of GDPR.

That year, our survey found the value the British public placed on manufacturing was undeniable. An overwhelming 79% said they wanted Government to put a greater value on manufacturing and seven in ten (69%) viewed manufacturing as essential, particularly in a post Brexit world.

Yet, despite the value placed on the sector, parents had reservations about their children pursuing a career in the manufacturing industry. Indeed, only one-fifth of parents said they would want their child working in manufacturing

with major misperceptions around pay and work conditions being the key reason.

What was also evident five years ago was the gender divide. 2018 saw the emergence of the #MeToo movement as a global challenge for progressive change. That year our survey found that while nearly a quarter (24%) of parents would encourage their son to work in manufacturing, this fell to just 14% for daughters. A major change in perceptions was clearly needed.

REALITY CHECK:

Modern UK manufacturing is high-skill, high-wage, and high-tech:

- The UK is home to 2 of the top 10 largest pharma companies (GSK/AstraZeneca).
- One in five jet engines in service around the world is made by Rolls Royce, the world leader in the development and production of jet engines.
- Six out of ten of the Formula One Grand Prix teams have an advanced manufacturing base in the UK.
- The UK is the world's largest manufacturer of small satellites. According to a report by the Satellite Applications Catapult, as of 2020, the UK was responsible for manufacturing approximately 40% of the world's small satellites (~500 KG).
- Over 1.3 million cars and commercial vehicles were produced in the UK in 2020, making the UK the 10th largest automotive producer in the world.
- The UK ranks third among OECD member countries for aerospace manufacturing by value.
- The UK is the second largest destination for space investment after the US, projected to account for 10% of the global space market by 2030.
- The UK has moved up one place in the global rankings and is today the eight largest manufacturing economy in the world.

TODAY: MANUFACTURING HAS CHANGED. AND SO HAS PUBLIC OPINION.

TRANSFORMATIONAL CHANGE

REALITY CHECK:

The number of low-skill jobs in manufacturing in the future will drastically decrease. Automation, digitalisation and 'green skills' will be the main focus of the sector's skills. In the future, we will see the end of the belief that manufacturing is a low-skilled industry and will compete with traditionally desirable sectors for staff and graduates.

The UK manufacturing sector has undergone a significant transformation over the last half-decade. Driven by technological innovation, environmental awareness, and economic change, manufacturers have been increasingly investing in new technologies and processes that have

made their operations cleaner, greener, safer, and more productive. The sector is now more competitive, creating higher-paying jobs that require higher levels of skills and building better products than ever before.

IN DEMAND: SKILLS AND JOBS

Our research has shown that 'technical' job roles will be in demand in the future of manufacturing. Indeed, 58% of companies already plan to recruit engineering technicians and 61% plan to recruit production and process engineers. 27% of manufacturers plan to recruit data analysts and 11% to recruit data scientists. Manufacturers now compete with other sectors for talent across the board and will continue to do so over the coming years.

To meet the evolving demands, manufacturers are expanding their range of skills required for their jobs. The core drivers of this change are net zero, digitalisation and flexible working. 74% of companies expect the demand for cognitive and meta-cognitive skills, such as critical

thinking, creative thinking and learning, to increase. These skills are essential in developing innovative practices across research, design and production, and other crucial roles in the manufacturing workforce.

65% of manufacturers anticipate a rise in demand for social and emotional skills like empathy, self-efficacy, responsibility, and collaboration by the end of this decade. This is especially crucial in light of flexible working, which could alter communication and collaboration in the workplace as companies strive to be more diverse and inclusive employers. A role as an engineer in manufacturing never looked so varied and appealing.

There are many innovative technologies that UK manufacturers are using today that have made the sector more high-skill, high-wage, and high-value:

Artificial intelligence (AI): AI is being used in manufacturing to automate tasks, improve quality control, and optimise production processes. AI has also created new high-skilled jobs in factories, in areas such as data science and machine learning.

Robotics: Robots are being used in manufacturing to perform dangerous and repetitive tasks which has freed up human workers to focus on more skilled and creative tasks.

Additive Manufacturing (AM): AM, also known as 3D printing, is being used to create complex parts and products that would be difficult or impossible to manufacture using traditional methods. This has enabled the creation of revolutionary new goods and components.

Big data analytics: Big data analytics is being used to collect and analyse data from manufacturing processes to identify areas for improvement, optimise production, and reduce costs.

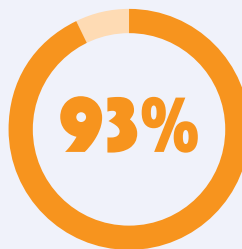
Virtual Reality (VR) and Augmented Reality (AR): VR is being used to train workers on new equipment and processes, as well as to simulate the manufacturing process before it is actually implemented, increasing learning and safety while simultaneously reducing costs. AR is being used to provide workers with real-time information about the manufacturing process, such as instructions, diagrams, speeding up production and increasing safety and quality.

The Internet of Things (IoT): The IoT is being used to connect machines, sensors, and products in smart factories that can operate more efficiently and autonomously.

MANUFACTURING MATTERS MORE TO THE PUBLIC NOW

The UK has a significant store of talent in manufacturing and many world-leading companies, but the popular image of British manufacturing is historically poor. Too few people know the incredible exploits of British manufacturers, whilst media perceptions remain negative and outdated. This year's survey results show that this understanding is changing, however. The British public are increasingly recognising the progress being made in the country's manufacturing industry. It is at the cutting edge of modern industry and already supplying solutions to the challenges of the future.

Our sector punches above its weight in so many ways. Today, earnings are 9% higher than the national average, manufacturing is responsible for two-fifths of private R&D, and nearly half of UK exports are manufactured goods. British manufacturing provides high quality jobs in regions where the Government and public wants to level up.



93% OF PEOPLE BELIEVE UK MANUFACTURING IS IMPORTANT FOR UK PROSPERITY

MAKING A SPLASH:

The good news is that when the public are seeing articles about UK manufacturing in the news, it's no longer doom and gloom. In fact, 27% of the public said the stories were positive compared to 17% that said they were typically negative. But there is still work to do given almost a third (32%) of the public said they had not seen a UK manufacturing story.

We have moved up in the world rankings

Since 2018, manufacturing has moved up in the world rankings, climbing from the 9th manufacturing nation in the world to 8th today.



1. CHINA



2. USA



3. JAPAN



4. GERMANY



5. REP. KOREA



6. INDIA



7. ITALY



8. UNITED KINGDOM



9. FRANCE



10. RUSSIAN FEDERATION

Five years ago, the public guessed the UK was 56th in the world, the position that was occupied by Kazakhstan.

We asked the question again this year and while the public have answered a bit more accurately, on average they assumed the UK is 43rd in the world, which in fact is the position held by the UAE.

2018:



The public put the UK in **56th place** which was **Kazakhstan**

2023:



The public put the UK in **43rd place** which is the **UAE**

Although the UK has both increased in world rankings in reality and in the British public's perspective, the gap between perspective (43rd) and reality (8th) demonstrate that there is more the sector needs to do to showcase its global performance. As the 8th manufacturing nation in the world, we have a lot to be proud of.

WE KNOW THERE ARE GOOD QUALITY JOBS, BUT DO THE PUBLIC?

The misperception about manufacturing jobs saw Make UK launched our (now) annual National Manufacturing Day

so manufacturers could and would throw open their doors to schools, colleges, and communities.

NATIONAL MANUFACTURING DAY 2023

Following the overwhelming success of last year's National Manufacturing Day, on Thursday 28th September 2023, manufacturers throughout the UK will once again be opening their doors. Members of the public will be invited into factories and sites for a behind-the-scenes look at how Manufacturers' facilities work, as part of this UK-wide Open House.

Local communities will have the chance to see the potential careers and jobs on offer within the wonderfully diverse manufacturing sector, as employers engage with all age groups - from school leavers, graduates, people looking to reskill and the local residents.

For Make UK and Manufacturers, this is an opportunity to showcase the diversity of a truly fascinating sector, the range of highly skilled jobs on offer and the amazing opportunities for reskilling and career development within manufacturing in the UK.

Manufacturers will participate in a number of ways, from a single tour to a full programme of events, with Make UK assisting every step of the journey.

Together, we will demonstrate the value of a manufacturing apprenticeship as an alternative route post school/college. National Manufacturing Day is a celebration of all of the industry's sub-sectors including automotive, food and drink, aerospace, defence, chemical and pharma.

Today, just over half of respondents (56%) felt there were good job opportunities in the sector, with just 15% of the public lacking confidence in the quality of manufacturing jobs. In addition, the public also see the value manufacturing plays in creating good quality jobs in their region.

When we look specifically at employment, there is a consistent perception across the country that manufacturing job opportunities are centered mostly in the north of England. In fact, strong industrial bases and manufacturing clusters are found throughout the UK. Manufacturing spans from Cornwall to Carlisle, from Andover to Aberdeen and in each of these areas there are new, exciting and ever-evolving jobs for the current and future workforce.



**OF PEOPLE THINK
THEIR LOCAL
AREA WOULD
BE WORSE
OFF WITHOUT
MANUFACTURING
JOBS**

YOU CAN FIND MANUFACTURING AND THE INNOVATIVE JOBS ON OFFER IN EVERY REGION

YOU CAN FIND MANUFACTURING AND THE INNOVATIVE JOBS ON OFFER IN EVERY REGION

NORTH WEST

CHEMICALS



TRANSPORT & EQUIPMENT



PHARMACEUTICALS



A Senior Chemicals Engineer typically earns £57k in this region

WEST MIDLANDS

TRANSPORT & EQUIPMENT



METAL PRODUCTS



MACHINERY EQUIPMENT



A Senior Production Engineer earns £52k in this region

WALES

TRANSPORT & EQUIPMENT



CHEMICALS



FOOD AND DRINK



A Senior Process Engineer typically earns £52k in this region

SOUTH WEST

TRANSPORT & EQUIPMENT



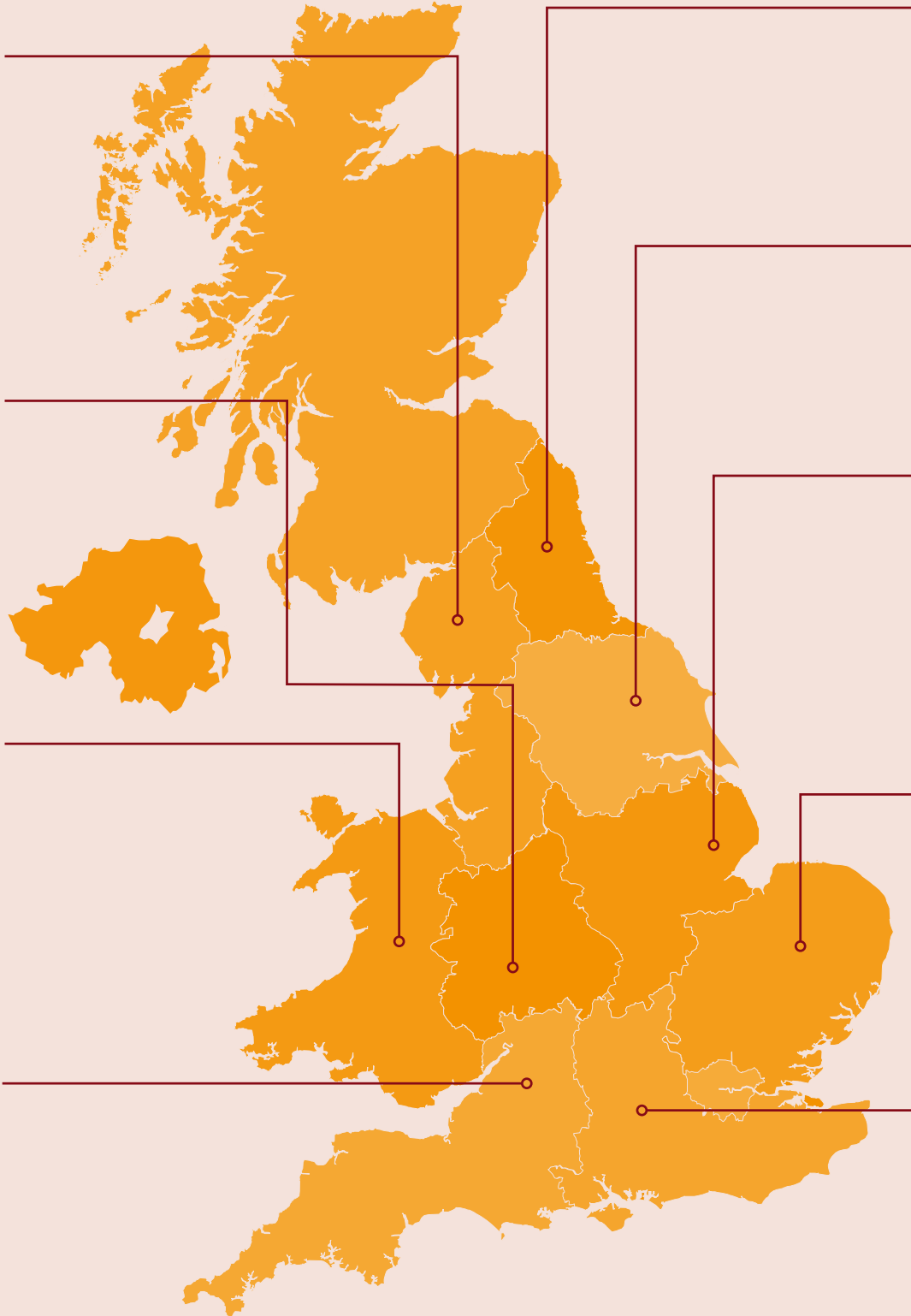
FOOD AND DRINK



MACHINERY EQUIPMENT



A Senior Research and Development Engineer typically earns £61k in this region



NORTH EAST



PHARMACEUTICALS



METAL PRODUCTS



MACHINERY EQUIPMENT

A Research and Development Manager typically earns **£56k** in this region

YORKSHIRE & THE HUMBER



FOOD AND DRINK



CHEMICALS



METAL PRODUCTS

A Stress Engineer typically earns **£71k** in this region

EAST MIDLANDS



FOOD AND DRINK



TRANSPORT & EQUIPMENT



RUBBER & PLASTICS

A Supply Chain manager typically earns **£58k** in this region

EAST OF ENGLAND



FOOD AND DRINK



MACHINERY EQUIPMENT



PHARMACEUTICALS

A Senior Design Engineer typically earns **£52k** in this region

SOUTH EAST



FOOD AND DRINK



ELECTRONICS



PHARMACEUTICALS

A Senior Software Engineer typically earns **£69k** in this region

JOB EXAMPLES

JOB OPPORTUNITIES

STRESS ENGINEER

Like to push things to the limit? This job is about pushing new products to see if they can be used in their full capacity by calculating and analysing levels of stress, fatigue, and damage tolerance.

You could earn, on average, **£67k**

JOB OPPORTUNITIES

RESEARCH & DEVELOPMENT MANAGER

Do you like to be in the thick of things? This is a varied and interesting role that is responsible for planning, directing and co-ordinating the work of the engineering team and others engaged in the research and development of materials, components, and products.

You could earn, on average, **£60-70k**

JOB OPPORTUNITIES

CHEMICAL ENGINEER

This exciting job will see you focus on research and development on chemical processes for both small and large manufacturers.

You may also be involved in the design, construction, commissioning, operation, maintenance and repair of chemical plants and control systems. The role advises on the safety implications and environmental impact of the chemical processes and their economic and commercial impact.

You could earn, on average, **£45k**

REGIONAL EXCELLENCE

SHEFFIELD HALLAM UNIVERSITY

Students benefit from SHU's partnership with a number of leading organisations including Rolls-Royce, Tata Steel, Kimberly Clark, JCB and Network Rail. Students get hands-on experience of the tools and equipment used in industry, from flight simulators, wind tunnels and automotive workshops to structural integrity, thermofluids and robotics labs.

UNIVERSITY OF SHEFFIELD

There are seven academic departments which have a range of state-of-the-art facilities, centres and laboratories which conduct internationally leading research. University of Sheffield has the only department in the UK dedicated to automation and systems engineering. The academic and research staff are world leaders in the study of autonomous systems, complex systems and signal processing, as well as intelligent systems.

UNIVERSITY OF MANCHESTER

Students choose from a variety of engineering courses including: chemical, computer, electrical and electronic, mechanical, aerospace and civil. Engineering students are able to work with and access a number of facilities including laser labs, wind tunnels and flight simulators.

WMG ACADEMY FOR YOUNG ENGINEERS (WEST MIDLANDS)

This University Technical College is specifically for students with an interest in Science, Technology, Engineering or Maths. The career-based education on offer engages students, helping them find their niche, reach their potential and kickstart a career in the real world.

UNIVERSITY OF BRISTOL

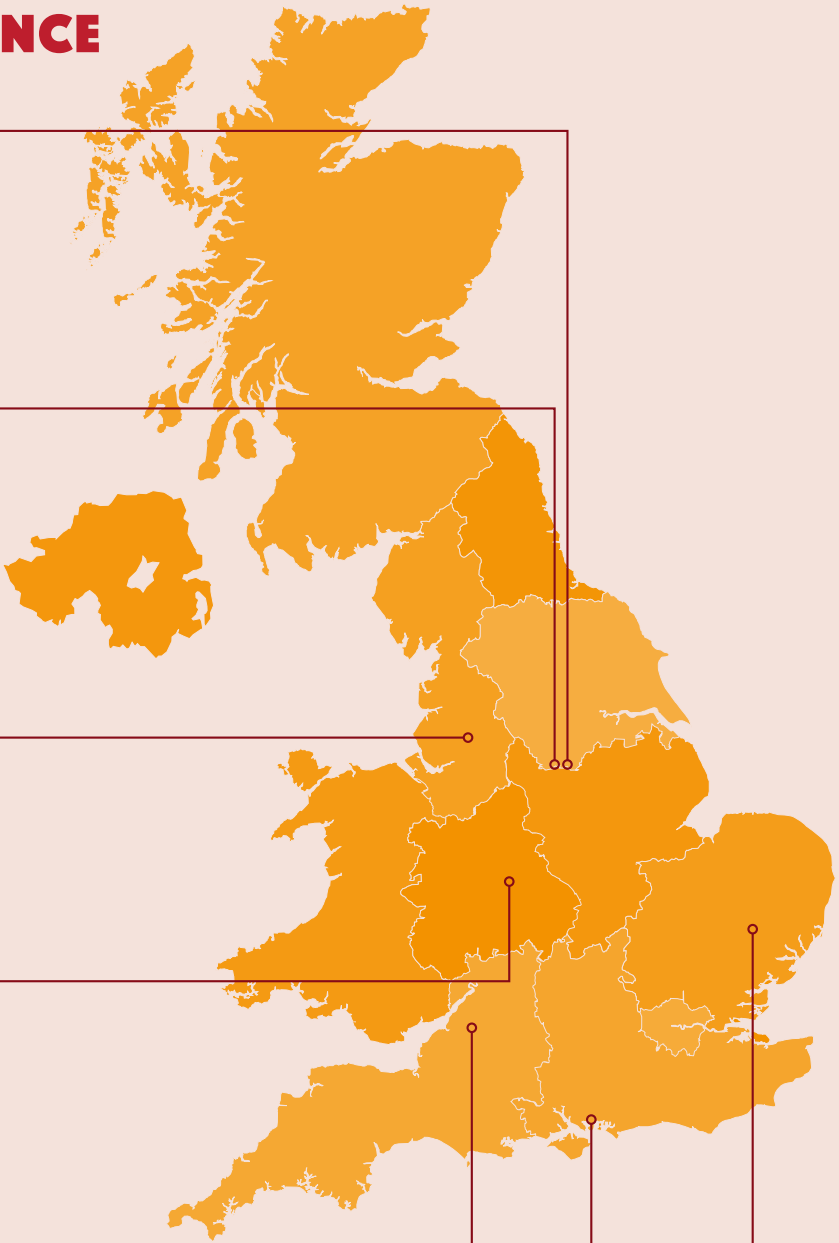
Bristol is ranked 2nd in the UK for General engineering (Guardian University Guide 2023), with 100% student satisfaction (NSS 2016–2020). Many recent graduates have either created their own companies or played a leading role in developing innovative startups

UTC PORTSMOUTH

Learning is student centered and employer informed so that there is a combined focus on students' personal development and their education. State of the art modern facilities include high-tech workshops, specialist equipment, the most up to date software and innovative resources.

WEST SUFFOLK COLLEGE

Engineering at West Suffolk College provides a practical and theoretical introduction to mechanical and electronic engineering, computer aided drawing and microprocessing. Students will get the skills to help solve the problems of tomorrow – from how aircraft work to the electronics in your mobile phone.





DID YOU KNOW?

There are 44 University Technical Colleges (UTCs) open across England, educating 19,000 students, and supported by more than 400 employers and universities.

You may have come across the term UTCs but may not be familiar with their purpose and structure. Despite their name, UTCs are not universities or technical colleges. They are actually secondary schools that are sponsored by a university or college.

HAVE WE SEEN A SHIFT IN PARENTAL PERCEPTION?

What was stark about our 2018 report was the proportion of parents, and in particular parents of those who had daughters, who would actively discourage their children from pursuing a career in manufacturing.

SEEING IS BELIEVING:

In 2018, only 29% of the population reported visiting a factory. However, in 2023, this number has increased to 68%. Less than one-third of people have never been to a factory, while only 3% are unsure if they have visited one.

40% OF PARENTS WOULD ENCOURAGE THEIR CHILD TO PURSUE A CAREER IN MANUFACTURING AND A FURTHER 42% SAID IT DEPENDS ON THE JOB

While parental perception is arguably playing a bit of catch up, parents are increasingly more positive about their children pursuing a career in manufacturing with two-fifths actively encouraging it. Just 16% say they wouldn't encourage a manufacturing career. Perhaps unsurprisingly, just over two-fifths (42%) said it would depend on the specific job or role.

Design and engineering are seen by parents as the top jobs in manufacturing:

When asked what job roles in manufacturing are most appealing to their child, parents ranked roles as follows:

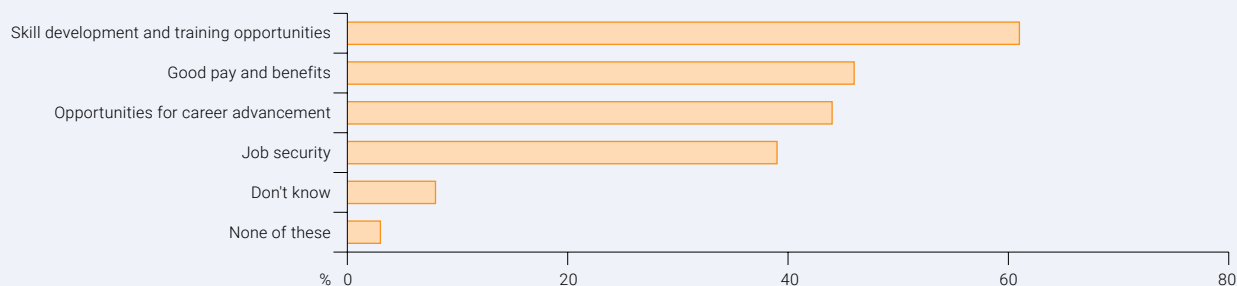
1. Design and engineering
2. Leadership and management
3. Quality control and inspection
4. Production and assembly on the shop floor

Of those that said they wouldn't encourage their child to pursue a career in the sector 22% said that it was because the sector does not offer 'good' pay. In truth, earnings in manufacturing are some 9% higher than the national average in the rest of the economy.

One in ten (10%) said there were not many opportunities for development. Again, on average, manufacturers invest more in training and development than other sectors.³

On a positive note, an impressive six in ten adults (61%) see one of the biggest advantages of working in manufacturing as skills development and training opportunities. Apprenticeships are an example of where the sector punches above its weight with almost three-quarters of Make UK members offering apprenticeships. Moreover, 44% of parents believe the opportunities for career advancement are a major advantage of working in manufacturing.

Chart 1: Parents see skills development and career advancements as advantages for their children if working in manufacturing
% parents citing benefits of working in manufacturing



Source: Make UK/SHU, Perceptions Survey via Savanta (2023)

³Employer Skills Survey 2019: Training and Workforce Development (publishing.service.gov.uk)

When asking parents their views on pay, almost half cited good pay and benefits as reason to work in manufacturing. These parents are right. Not only does the sector offer above average pay, but there are also many additional benefits as well. Make UK research reveals manufacturers are likely to offer wider benefits such as shift pay premium, overtime, numerous bonuses and financial incentive schemes as well as non-financial forms of support.

48% OF PARENTS BELIEVE WORKING IN MANUFACTURING IS A DESIRABLE OR PRESTIGIOUS CAREER COMPARED TO 28% WHO THINK IT IS NOT DESIRABLE

THE SECTOR IS REDUCING ITS EMISSIONS, AND THE PUBLIC HAVE NOTICED

In 2019, the UK became the first major economy to set a legally binding target to reduce its greenhouse gas emissions and achieve 'net zero by 2050'. We are also the first and only industrialised nation to have almost completely phased out coal over the last decade. Today almost half of the UK's energy mix comes from renewable energy, notably wind power.

Manufacturers have taken great strides to play their part in tackling climate change, not just through the impressive green technological advancements that have been made, but also reducing emissions within their own factories. Make UK's wider research revealed that the drive to reduce carbon emissions is now embedded in most companies' business plans with a quarter of Britain's manufacturers believing new digital technologies have already had an impact on decarbonisation and their ability to achieve challenging net zero targets.

The public have recognised this action. Almost six in ten (57%) now agree that manufacturing is an environmentally friendly sector, with just 16% seeing it as being environmentally unfriendly.



The UK manufacturing sector is thus playing an important role in tackling climate change:

Using renewable energy: Many UK manufacturers are using renewable energy sources, such as solar and wind power, to power their factories, helping to reduce reliance on fossil fuels and cut emissions of greenhouse gases.

Improving energy efficiency: UK manufacturers are increasingly investing in new technologies and processes to improve the energy efficiency of their operations, cut their energy consumption, and reduce unnecessary emissions.

Reducing waste: UK manufacturers are working to reduce the amount of waste they produce. This includes recycling materials, improving product lifespans, and reducing packaging.

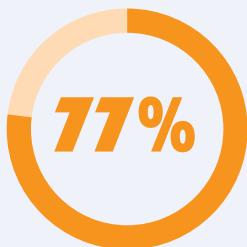
Using sustainable materials: UK manufacturers are using more sustainable materials in their products, such as recycled plastics and bio-based materials. Many factories have also installed wind turbines and solar panels to produce their own energy and reduce reliance in the national grid.

Offsetting emissions: Some UK manufacturers are offsetting their emissions by investing in projects that reduce greenhouse gas emissions elsewhere. This includes projects such as planting trees on site or investing in renewable energy projects.

THE FUTURE: THE PUBLIC WANT TO SEE MORE MANUFACTURING

STRENGTHENING OUR NATIONAL RESILIENCE BY BOOSTING UK MANUFACTURING

OVER THREE-
QUARTERS



**OF THE PUBLIC SAY WE NEED A
STRONG MANUFACTURING BASE
TO INCREASE ITS RESILIENCE
AND PREPARE FOR FUTURE
CHALLENGES**

The UK economy, British businesses, and the British people, have faced significant challenges over the past five years, including the Covid-19 pandemic, political crises emanating from our EU exit, and the consequences of the ongoing war in Ukraine. UK manufacturing has a strong track record of resilience, helping us to overcome economic challenges. Today we face a cost-of-living crisis and a cost of doing business crisis, but we must also confront the climate and face many more challenges going forward.

Innovative technologies can help manufacturers to become more efficient, productive, and adaptable to change. The British public believe the government should play a role in supporting the development and adoption of innovative technologies in the UK manufacturing sector. The government can provide funding for research and development, create a supportive regulatory environment for businesses to adopt new technologies, and work with businesses to identify and address any barriers to the adoption of new technologies. By taking these steps, the government can help the UK manufacturing sector to become a leader in the global economy.



GREAT BRITISH BRANDS:

What can you find and buy that's made in the UK?

Colourful and fresh personal care products with LUSH – over 12 million bath bombs a year are handmade by product chefs in their factory in Poole.

Luxury cars - at Goodwood, Rolls Royce, owned by BMW, is gearing up to expand its car manufacturing.

Aircraft Engineering - Rolls Royce's new 'factory for the future' is shaping the next generation of aviation technology.


Durable and fashionable leather shoes with Doc Martens – in their Northamptonshire factory, Dr Martens' workers produce the iconic boot and give life to old stock, fulfilling the company's 'Planet, Product, People' sustainability policy.

Quality cosmetics with Whitman Labs and Estee Lauder – in Petersfield, Whitman Labs are responsible for producing a number of Estee Lauder products and have been trialling new 3D Printing techniques to overcome engineering challenges and prototype new production methods.

Timeless outerwear with Barbour – classic Barbour jackets including the Beaufort, Beadnell, Classic Bedale, and Border bear their 'Made in England' stamp, proudly stating that they have been manufactured at the company's factory in Simonside.

Elegant and tasteful handbags with Mulberry – in Somerset, where 50% of the company's leather bag production occurs, factory operations have been carbon neutral since 2019 with aims for the entire business to operate this way by 2025.

Brilliant British Brompton Bicycles – starting out in London almost 50 years ago, Brompton Bicycles have since expanded their manufacturing to Sheffield and continue to produce foldable bicycles which are often spotted on the tube.



BRITS WANT TO BUY BRITISH

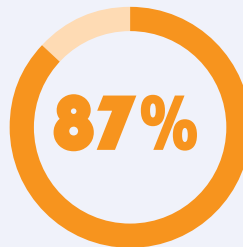
Building a strong industrial base is increasingly important because Brits want to buy British.



OF BRITS FEEL IT IS IMPORTANT TO BUY BRITISH PRODUCTS

There is growing demand for British made goods, both at home as well as abroad.

The public are opting to buy products that are made in this country, recognising that it is better for the environment, helps the economy to grow, and can create local jobs. Quality of product and trust were strong factors for our survey respondents.



OF BRITS THINK BRITISH MADE PRODUCTS ARE EITHER THE SAME QUALITY OR HIGHER QUALITY THAN OTHER COUNTRIES

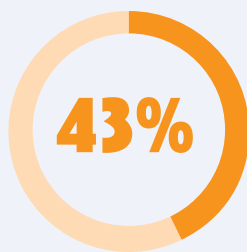
However, the sector is now at a critical juncture. Manufacturing matters massively to the UK public and to the prosperity and security of our country. We now have the opportunity to collaborate with innovative manufacturing companies and leverage the UK's academic and research strengths. Firms are clear that an industrial strategy would bring the benefits of a long-term vision and a stable environment in which they can plan, invest and grow. There is broad agreement among stakeholders about what the UK needs for a successful industrial strategy. These can be broadly categorised into five themes, skills; infrastructure; finance; innovation, and the business environment. Internationally the UK risks being squeezed between the US Inflation Reduction Act and the European Union's Green Deal Industrial Plan, both of which are already having a significant detrimental impact on UK investment. Yet as we face these challenges the UK remains the only developed economy without an industrial strategy. Never has the case been clearer to adopt one.



TECHNOLOGICAL ADVANCEMENTS WILL ACCELERATE

We are living in a time of major change in the labour market. Recent studies have predicted that over the coming years, millions of UK jobs could be at risk of being lost to automation. Whereas previous job-replacing technological change was limited to tasks requiring human brawn, the next wave of technology looks like replacing human brains. Naturally this is causing concern among the public about the future of employment.

TWO-FIFTHS



**OF THE PUBLIC
DON'T THINK WE
SHOULD ADOPT NEW
TECHNOLOGY IF IT
LEADS TO JOB LOSSES**

Yet, as manufacturers already know, if managed well, this revolution is not necessarily a cause for concern. Since the first Industrial Revolution, every new labour-saving technology has been met with anxiety about the impact on jobs, but concerns over mass unemployment have never materialised. In fact, technology has been a net creator of employment. Efficiencies gained through new technologies reduce the cost of production, which, when passed on to the consumer, increase spending power, stimulating demand and creating new jobs. Rather than making humans redundant, technology has simply shifted work to other areas. The onus is on manufacturers to increase awareness of this and on the government, the education and skills sector, employers and the public themselves to prepare for the coming changes through investments in education and skills training.

CREATING SUSTAINABLE JOBS FOR THE NEXT GENERATION

The transition to Net Zero will have a significant impact on jobs, skills, and technologies in the UK manufacturing sector. Some jobs will be lost, but new ones will be created. Manufacturers will need to adopt new technologies to reduce its emissions and workers will need to be trained in new technologies and processes.

Just as important as parental perception is the perception children have of manufacturing. After all they are the future. Unfortunately there seems to be more work to do

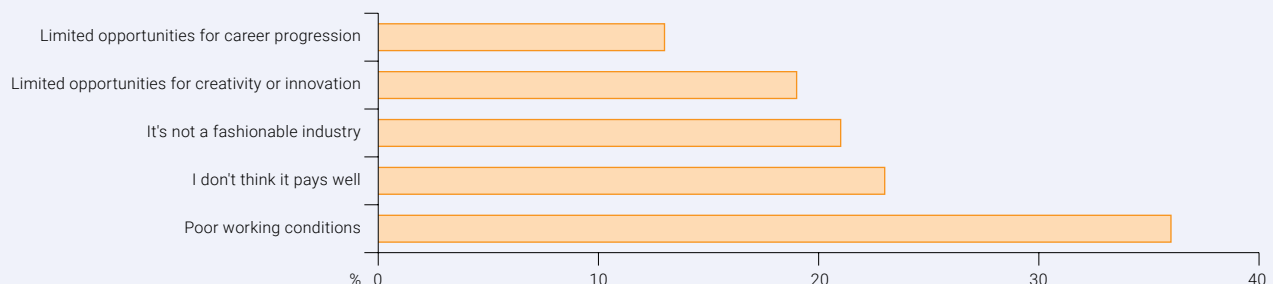
to inspire them to work in our sector. Over half (55%) of children surveyed said they haven't considered a career in manufacturing compared to one in three (31%) that have.

Children see the advantages of working in the sector most notable skills development and training opportunities (58%), good pay and benefit (40%) and opportunities for career development (34%)

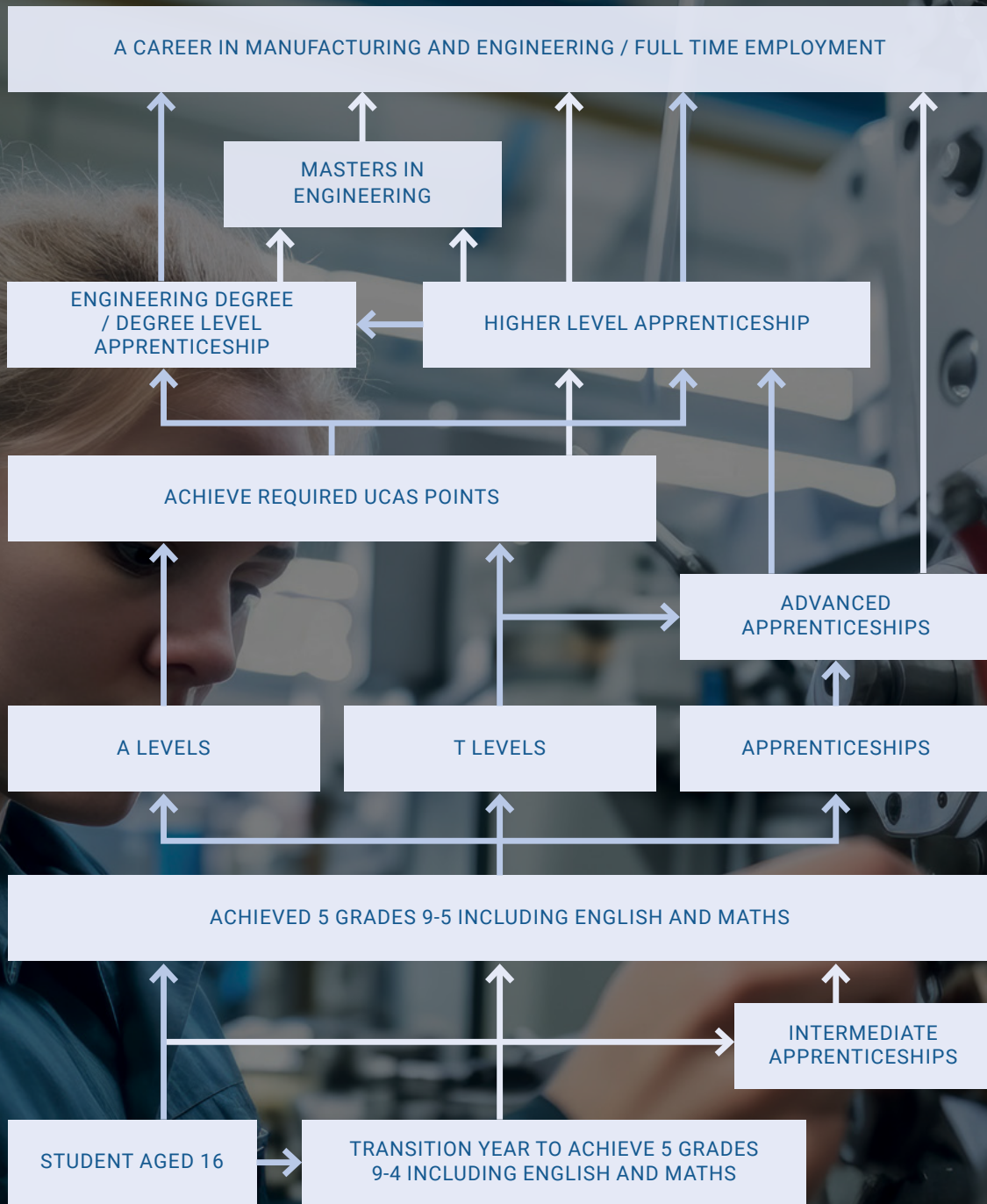
But they also see some pitfalls.

Chart 2: Children perceive the biggest pitfall of working in the sector as poor working conditions

% children citing disadvantages of working in manufacturing



Source: Make UK/SHU, Perceptions Survey via Savanta (2023)



44% of children have the perception that a job in manufacturing would be repetitive or boring work. One in five (19%) children said the manufacturing sector lacks opportunities for creativity and innovation.

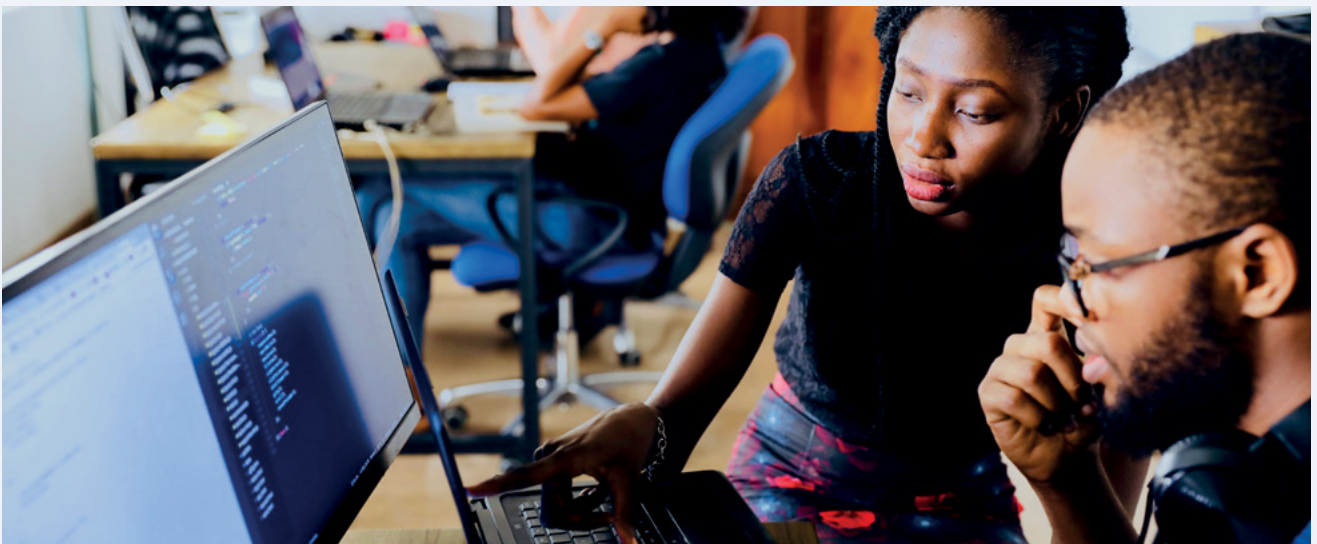
REALITY CHECK:

As a young person you don't need to pick either a vocational or academic pathway to pursue a career in manufacturing. Increasingly, the pathways are interwoven meaning you can combine both styles of learning. Degree Apprenticeships are a perfect example of this.

They could not be more wrong. Manufacturing is a diverse and exciting sector with a wide range of job opportunities

for young people. From engineering and design to robotics and automation, in motor racing, space exploration, defence, medicine, and construction, there are countless opportunities to find a rewarding career in manufacturing. The sector is constantly evolving, with new challenges and opportunities to learn and grow. Innovation is at the heart of manufacturing.

Engineering and manufacturing apprentices have fallen by more than a third since 2017. A reduction in apprentices now means a significant gap in the sector's need for skills for the future. Both the Government and the sector need to take stock and assess how they can attract and continue to develop degree apprenticeships to get the best talent pipeline. Degree apprenticeships are often underutilised despite offering students a degree qualification (without the price tag of a traditional degree), and a qualification that is co-designed by employers to make sure it's relevant to the skills the industry is looking for.



INTERESTED IN DEGREE APPRENTICESHIPS?

You can study for a degree or masters whilst applying your learning to real-world projects in the workplace, with no tuition fees to pay and whilst earning a salary.

You could study **Material Technology**, giving you understanding of materials engineering across sectors

such as automotive, aerospace, healthcare, defence and energy. Or you could focus on **Electrical and Electronic Engineering Technology**, designed to help you become an electrical technical engineer. Or you could study **Mechanical Engineering Technology**, specialising in product design and development engineering.

CONCLUSION

The UK manufacturing sector is an essential contributor to the country's economy, generating jobs, new technologies, tax revenue, security, productivity growth, and economic prosperity. Progress has been made over the last five years in improving the understanding about and perception of UK manufacturing.

There is now a greater appreciation of the sector's importance to the UK economy, and its role in innovation, job creation, national resilience and economic growth. However, there is still more to do to ensure that manufacturing is seen as a desirable career choice for young people. The sector needs to continue to invest in skills development and innovation, and to communicate its positive messages to a wider audience. By doing so, we can ensure that our sector remains a vibrant and successful part of the UK economy for many years to come.



This report has highlighted several key findings. Firstly, the emerging understanding of the importance manufacturing plays in the growth of the UK economy, secondly it highlights the UK's significant contribution to manufacturing on a global stage and finally, for those education providers that align to the sector, the report highlights the reality that a career in manufacturing is highly rewarding.

For many years, the manufacturing sector has been in competition with medical, legal and other professional career routes, and perhaps was seen as the poor relation, and as such struggled to attract the talent it desperately needed to address the challenges it faces in terms of the impact on the climate, but also embracing the technological advancements highlighted in this report.

Now with both young people and their parents and guardians realising the value of the manufacturing sector, this opens up new and exciting career opportunities. Universities and Colleges need to ensure that they are listening to the skills needs of the sector and developing education solutions that are future proofed to meet the broad range of challenges and opportunities the sector faces both now and in an uncertain and complex future.

The manufacturing sector is well versed in the value of apprenticeships and more recently with the advent of degree apprenticeships that align to the manufacturing sector, we have seen a real interest from both employers and apprentices, of all ages, keen to work in a sector that is creating sustainable jobs for the next generation.

We at Sheffield Hallam University are committed to supporting the manufacturing sector, which is so key to our region's future growth and see this report as a 'call to arms' to ensure we stay at the forefront of developing forward thinking solutions to the sector's ongoing and ever-changing skills needs.

Sheffield Hallam University's vision is to become the world's leading applied university, transforming lives and creating opportunities for people from all backgrounds. With more than 33,500 students, it is one of the UK's largest universities and a leading provider of health education and teacher training. Sheffield Hallam also educates more students from underrepresented backgrounds than any other UK university. The application of knowledge is at the heart of everything the University does, from students' learning and experience to business partnerships and innovative research addressing real world challenges.

As a university proudly of its place, Sheffield Hallam is committed to Sheffield and South Yorkshire. In recognition of providing leadership to drive improvements in social mobility, health and the economy, the University recently received the Outstanding Contribution to the Local Community award at the Times Higher Education Awards (2022).

Sheffield Hallam's award-winning approach has also seen it named University of the Year at both the Educate North Awards (2022) and the UK Social Mobility Awards (2021) as well as Outstanding Entrepreneurial University of the Year (2021).

www.shu.ac.uk

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Sheffield Hallam University funded this research through the Higher Skills Higher Growth Project, which is delivered in partnership by Sheffield Hallam University, The Sheffield College and RNN Group, and is part funded by the European Social Fund Programme 2014-2020. The project aims to connect local SME businesses with HE and FE students, graduates and apprentices. The research will provide clear evidence of opportunities to increase participation between the two sectors within the region.



Make UK is backing manufacturing – helping our sector to engineer a digital, global and green future. From the First Industrial Revolution to the emergence of the Fourth, the manufacturing sector has been the UK's economic engine and the world's workshop. The 20,000 Make UK members we represent have created the new technologies of today and are designing the innovations of tomorrow. By investing in their people, they continue to compete on a global stage, providing the solutions to the world's biggest challenges. Together, manufacturing is changing, adapting and transforming to meet the future needs of the UK economy. A forward-thinking, bold and versatile sector, manufacturers are engineering their own future.

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