

“

*This key outcome from the project is fresh and stimulating insights which create a vivid picture of the UK's place in the world and the three main areas that need focus to tackle. They highlighted the UK's policy, perception and productivity challenges: data, definition and diversity.*

”



## Innovative research into international perception of manufacturing tackles sector's underlying PR and productivity problems

Groundbreaking research into global perceptions of manufacturing by Made Smarter Innovation-backed academics has proposed new public and policy initiatives to tackle the UK's skills challenges.

The study, *“How to make manufacturing charming again? It is everything, everywhere, all at once”*, led by a team of economic and social scientists from InterAct, demonstrates the benefits of persistent public engagement and collaborative policy could have on creating a diverse, skilled workforce fit for the future.

The research, delivered by the Made Smarter Innovation-funded research centre based at Loughborough, Strathclyde and Sheffield Universities, proposed additional research, as well as increased public and industry engagement and awareness to capitalise on what appears to be a renaissance in public opinion and policy on manufacturing.

Natasha Stanton, Innovation Lead for Made Smarter Innovation, said: *“InterAct is a collaborative effort that aims to bring together economic and social scientists, UK manufacturers, and digital technology providers to address the human issues faced by employers resulting from the diffusion of new technologies in industry.*

*“We know that technology alone is not enough. We need to harness the knowledge of people and society to really reap the full benefits that technology can bring.”*

Professor Jillian MacBryde of the University of Strathclyde, co-director of InterAct, said: *“InterAct seeks to pioneer human insight for industry and bring together academics from the social sciences to support the innovation and diffusion of digital technologies that will result in a stronger, more resilient UK manufacturing industry.*

*“The outcomes of this strand of research are precisely the reason why collaborations between academia, industry and policymakers are vital to build a strong, vibrant, interdisciplinary community to support the digitalisation of UK manufacturing.”*

### The Inspiration

Manufacturing was once the centre of the UK's industrial revolution, contributing to the nation's wealth and position as the world's largest economy. Since the 1970s, the former powerhouse has become fragmented through a combination of offshoring production, declining interest in industrial policy and low technology adoption rates. Other nations have taken the lead; the UK manufacturing is now 12th in world rankings in terms of volume contribution to the economy<sup>1</sup>.

Much has been said about the ongoing 'war for talent', high numbers of unfilled vacancies and skill shortages in UK manufacturing. Previous research has demonstrated that the older industrial legacy of oily, dangerous factories filled with poorly paid men doing repetitive tasks, persists, and makes the sector less desirable to jobseekers, especially among young people.

Global events like the 2008 financial crash and Covid pandemic have renewed focus on the importance of support for manufacturing. Countries like the UK and US are now working to reverse the trend of outsourcing and deindustrialisation. However, while the US has used enormous stimulus packages to tackle the challenge, the UK has taken a different approach. Recent policy announcements including an Industrial Strategy demonstrate a renewed commitment to manufacturing as a key economic driver.

In this context, in 2022 InterAct's The Future of Work led by academics Dr. Robert Stewart, Professor Jillian MacBryde, Professor Colin Lindsay and Dr. Carolina Marin-Cadavid from the University of Strathclyde completed a survey of 2,107 people from across the UK to provide insights into their perceptions of the manufacturing sector and jobs. The findings demonstrate that, while the public generally regards the sector as important and economically valuable, a lack of knowledge or



outdated assumptions about the nature of manufacturing jobs makes them appear undesirable.

In response to the survey, InterAct wanted to assess how UK perceptions of manufacturing compared to other advanced economies where manufacturing is prevalent.

### The Innovation

Academics Guendalina Anzolin and Jennifer Castañeda-Navarrete, based at the Institute for Manufacturing at the University of Cambridge, and Dalila Ribaudó of Aston University, embarked on a project to explore how perceptions of manufacturing have been changing across countries and what actions governments are taking to bring manufacturing back into the policy agenda.

This project involved a systematic review of academic and policy literature, exploring the attitudes, roles, skills and language used in seven countries where manufacturing plays, or has played, a significant part in their economies: the UK, the US, Singapore, South Korea, Switzerland, Germany, and Canada.

This involved analysing 68 strategies and initiatives related to manufacturing published between 2018 and 2023. The findings were supported and scrutinised by a roundtable discussion with representatives of key multilateral organisations including: the United Nations Industrial Development Organization (UNIDO), the United Nations Conference on Trade and Development (UNCTAD), the International Monetary Fund (IMF),

<sup>1</sup> [www.themanufacturer.com/articles/uk-manufacturing-sector-slips-to-twelfth-in-world-rankings](http://www.themanufacturer.com/articles/uk-manufacturing-sector-slips-to-twelfth-in-world-rankings)

the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) and the Organisation for Economic Co-operation and Development (OECD).

The report also tracks how the UK public perceptions have evolved over time which relied on evidence from governments, industry associations and consultancy firms. This analysis looked at the likelihood of working in the sector, often across age groups, but rarely by gender, despite women being systematically under-represented.

Researchers drew three main conclusions from the study:

While manufacturing has experienced a renaissance since the global financial crisis

and the pandemic, perceptions of manufacturing tend to be more positive in Germany and the US than in the UK. Residents of Germany and the US are the most likely (75%) to perceive manufacturing as having significant importance in their country's economy and consider it 'very attractive' as a career. This contrasts with the UK, where only 40% perceive manufacturing as offering good job opportunities.

Three megatrends have emerged from the revival: digitalisation, sustainability and skills. These are both changing and characterising the new role that manufacturing can have in driving these shifts and supporting countries' growth and resilience. For instance, terms like "advanced manufacturing" are increasingly used to highlight the high-tech nature of this industry.

At policy level, there is a high degree of diversity in terms of how digitalisation is perceived across countries and sectors. In addition, while tackling environmental sustainability, digitalisation of manufacturing and skills remain top priorities, the pandemic and geopolitical tensions have increased emphasis on resilience, national security, reconfigured value chains and technological sovereignty.

Dr Guendalina Anzolin said: *"While manufacturing never went away, in reality, at the policy, business, and academic levels, it disappeared from the public debate. However, in these past*

*few years, it has become clear that manufacturing has a special role in our societies to solve the grand challenges that humanity is facing."*

Dr Dalila Ribaudo said: *"As fewer young people than before want to pursue a career in manufacturing, it is crucial to challenge misguided perceptions of what the sector is and can be. Through analysis of narratives surrounding the sector, we have identified some of the misconceptions that keep young people away, and set out recommendations for how to create more truthful and engaging narratives."*

### The Impact

This key outcome from the project is fresh and stimulating insights which create a vivid picture of the UK's place in the world and the three main areas that need focus to tackle. They highlighted the UK's policy, perception and productivity challenges: data, definition and diversity.

The team recommended implementing a systematic data collection process to track public perceptions of manufacturing and how they evolve over time. This could be done through annual or biennial surveys, gathering insights on how the public views manufacturing and the influence of digital and green transformations. Deeper analysis and understanding would be achieved by capturing data on demographic factors such as age, gender, education, sub-sectors, and regional breakdowns.

The setting of measurable targets and initiatives aimed at enhancing diversity in manufacturing to attract younger demographics and unlock the talent of under-represented groups. This includes providing education and career information about manufacturing from the early education stages to dispel misconceptions and nurture interest.

These findings have been shared widely with academics, policy makers, trade bodies and industry.

**This work has informed an ongoing project commissioned by the Department for Business and Trade on the true value of manufacturing, how 'advanced manufacturing' is defined and the servicification of manufacturing, aspects quite important in shaping perceptions of manufacturing.**

The research was showcased at the 2023 Women in Manufacturing: Changing Perceptions conference in Coventry alongside the InterAct-funded "Women in Digital Manufacturing" policy brief aimed at raising awareness about the challenges faced by women in the manufacturing industry and advocating for gender-inclusive digitalisation.

Meanwhile, the findings were presented at the "International Perception of Manufacturing" workshop held at Aston Business School. The event brought together academics, policymakers, and practitioners sharing their insights on the current manufacturing landscape in the UK and the impact of branding



on perceptions. This event fostered a spillover collaborative workshop with GW+Co., a marketing strategy company, to initiate a change in the perception of manufacturing.

Other ways the research has been shared include a webinar, which was attended by 55 people, and created an [animated video explainer](#) of the issue, which has been viewed hundreds of times.

Dr Jennifer Castañeda-Navarrete said: *"In a world where perceptions shape industries and policies,*

*understanding the narrative surrounding manufacturing is crucial. I am delighted that our research - examining the factors that influence these perceptions and tracking how the UK public's perception has evolved over time - has been so well received and has the potential to influence future Government policy."*

