Nottingham Business School
Nottingham Trent University

EXPLORE

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Introduction

Welcome to our inaugural edition of *NBS Explore:* a magazine which highlights examples of our sustainable, impactful research. At NBS, we seek to resolve some of the key challenges in the world, reflecting the ambition of the United Nations Sustainable Development Goals.

Our research explores a wide range of topics and issues that impact everyday lives. Some of these projects are included in this magazine, for example: one researcher working with farming families in Nepal to reduce poverty, through to a research centre embarking on large-scale transformation of sustainability in the beef farming industry, through the use of AI. Research at NBS has also critically assessed sustainable work practices in the food delivery sector in the UK. The articles here explore employee engagement as a way to improve business success, plus the importance of organisational culture in creating sustainable change. Our researchers help organisations to better negotiate and co-operate internationally. We measure local and regional competitiveness but also examine the place of the university and the importance of working in partnership for a sustainable regional economy.

The research stories in these pages question how we think about the world, such as the dilemma of the privacy-personalisation paradox inherent in the use of data, plus how insights can be unlocked from data in the voluntary sector. Importantly, ways that charities measure their societal impact and the role of sustainability and rehabilitation in health care also feature.

At its heart, our research is for and about people - building on knowledge leadership in managing human resources and relationships to develop ideas about what good work might look like, highlighting diversity, equity and inclusion, using our expertise to challenge precarious and exploitative practices. The application of our research findings will contribute to more inclusive economic growth and accountable governance in our region, our country, our world. Research for a better tomorrow.

Professor Jo Richardson
Associate Dean Research, Nottingham Business School

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Lifting Rural Nepali Households Out of Poverty

Roshan Adhikari

In Nepal's Terai region, small-scale farmers rely heavily on agriculture for their livelihoods, cultivating staple crops like rice, wheat, and maize.

In Nepal's Terai region, small-scale farmers rely heavily on agriculture for their livelihoods, cultivating staple crops like rice, wheat, and maize. These crops are vital not only for household consumption but also for Nepal's national food security, with the Terai known as the country's 'grain basket'. However, dependence on unpredictable rainfall makes these farmers vulnerable to droughts and the impacts of climate change, often trapping households in cycles of poverty.

Our research examined how improved access to irrigation can enhance agricultural productivity, boost household income, and promote economic mobility.

Our study took place across 31 villages in the Chitwan and Kapilvastu districts. Expanding the traditional definition of "household" our approach involved all family members, providing a more comprehensive view of household dynamics and poverty.

We analysed how various factors, including access to irrigation, agricultural productivity, remittances, and market engagement, influence a household's ability to escape poverty.

We identified recurring patterns and themes, linking these to broader pathways of poverty alleviation or stagnation.

Household Wellbeing

Our research revealed several key factors that influence household wellbeing:

Irrigation Access: Access to irrigation is a crucial factor in determining agricultural productivity and market participation. Farmers without irrigation struggled to grow crops outside of the rainy season, limiting their ability to sell produce in local markets. In

contrast, households with reliable irrigation could cultivate multiple crops, boosting both their market engagement and income.

Migration and Remittances: Many households in the Terai received remittances from relatives working abroad, especially in Gulf countries. Instead of reinvesting in agriculture, families used these funds to pay off debts and diversify their income sources, moving away from subsistence farming. This transition allowed them to achieve greater financial stability and reduce their dependence on the uncertainties of agriculture.

Health and Education: Households that experienced increased income, whether from improved crop yields or remittances, invested in better healthcare and education for their children. These investments are essential for long-term resilience, as better-educated children have more opportunities for economic mobility.

Environmental and Market Dynamics: Environmental challenges, such as irregular rainfall and drought, continue to affect household stability. However, households with better access to irrigation and market networks are more resilient to these shocks, as they can consistently produce surplus crops for sale and avoid the worst impacts of climate-related disruptions.

Escaping poverty

Our analysis identified two primary pathways through which households in the Terai escaped poverty.

Access to Irrigation and Market Participation: Households with access to reliable irrigation significantly improved their agricultural productivity. This allowed them to cultivate more crops, sell surplus produce, and increase their income. Irrigation provided a buffer against erratic weather, enabling households to plan for long-term investments in education, healthcare, and farm improvements.

Income Diversification through Migration: Migration to foreign countries and bigger cities in Nepal was a critical income source for many families. Remittances allowed households to pay off debts, transition away from farming, and invest in more secure economic activities such as small businesses. This diversification lowered their exposure to agricultural risks and helped them achieve financial stability.

Recommendations

Based on our findings, we propose several recommendations to support smallholder farmers and promote economic mobility in the Terai region:

1 Subsidize Irrigation Infrastructure: Provide targeted subsidies or low-interest loans for smallholder farmers to install irrigation systems. This would help reduce their dependence on rainfall and allow them to farm year-round, improving their agricultural productivity and income.

2 Promote Adoption of Fuel-Efficient Pumps: Encourage the adoption of fuel-efficient irrigation technologies through financial incentives and training programs. Many farmers use inefficient pumps, increasing their operational costs. Promoting more fuel-efficient models would reduce irrigation costs and improve profit margins for smallholders.

3 Support Marginalized Farmers: Target subsidies to help marginalized and landless farmers access irrigation equipment, particularly those without existing access to irrigation infrastructure. This could reduce the disparity between irrigation equipment owners and renters, improving agricultural outcomes for the most vulnerable.

4 Leverage Remittances for Income Diversification: Introduce programs that provide financial literacy training to remittance recipients, encouraging them to invest in non-agricultural sectors like small businesses. Diversifying income sources would reduce household reliance on farming and ensure long-term financial security.

Conclusion

Access to reliable irrigation is key to helping rural households in Nepal's Terai region break free from poverty. However, many farmers face barriers such as high costs and inefficient irrigation technologies. By subsidizing irrigation infrastructure, promoting fuel-efficient technologies, and supporting marginalized farmers, policymakers can improve agricultural productivity and household income.

Migration also plays a vital role, as remittances help families diversify their income and transition away from subsistence farming. Together, these targeted interventions can help foster sustainable economic mobility in the Terai.

This study, funded by the British Academy/Leverhulme Small Research Grants, was conducted in collaboration with Nottingham Trent University, the University of Manchester, the University of Exeter, and the International Development Institute, Nepal.

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Sustaining workplace success through employee engagement

Sarah Pass, James Court-Smith, Yu-Ling Lui-Smith, Maranda Ridgway and Nadia Kougiannou

In the ever-evolving landscape of the UK economy, one crucial factor stands out as both a challenge and an opportunity: employee engagement. Engaged employees are more likely to contribute innovative ideas, collaborate effectively with colleagues, and deliver high-quality work consistently. They are also more resilient in the face of challenges, demonstrating greater adaptability and problem-solving skills. However, applying employee engagement into practice is a persistent challenge for UK organisations. It is an unlikely coincidence that the UK struggles with both low employee engagement and stagnant productivity. This is the challenge that our team at Nottingham Business School has been working to address. Working in close collaboration with Engage for Success (EFS), we are undertaking a portfolio of projects with practitioners, organisations and thought leaders. Engage for Success is a voluntary move-

ment launched by the UK Government in 2011 in response to the MacLeod Report (2009). The movement was tasked with developing our understanding on engagement and sharing best practice.

A prominent project between EFS and NBS is the annual engagement survey. Started in 2022, the survey was designed to explore the impact of the Covid-19 pandemic on UK employee engagement levels. Using a representative sample of the UK working population, the survey developed the EFS Engagement Index and established a UK engagement benchmark.

The 2022 survey showed a concerning and dramatic decline in levels of engagement during the pandemic. Given the unprecedented nature of the crisis and the impact on our lives, a decline was not unexpected. However, despite the easing of Covid-19 restrictions, engagement levels have not improved, remaining significantly below pre-pandemic levels. Findings from the 2023 survey have not dampened these concerns, and have showed a troubling stagnation in engagement levels, mirroring alarming trends seen across reports on productivity, wellbeing, and economic activity.

Despite these troubling statistics and the worrying backdrop of stagnation, the survey sheds light on variations in engagement, offering organisations a chance to act. A key aim of the engagement survey is to explore drivers of engagement and examine engagement in practice. In doing so, we have highlighted differences across participant backgrounds (e.g. sexuality, long-term health conditions, financial pressures etc), organisational size, sector, and managerial practices.

In addition, the 2023 survey highlighted the significance of senior leaders and managers on employee engagement. Employee engagement levels were significantly higher for respondents who believed that their senior leaders and managers sufficiently prioritised the people issues when making key decisions. Respondents who felt that both senior leaders and managers sufficiently prioritised people-related issues when making the big decisions reported 26% higher engagement levels compared to those who did not share this belief. Additionally, they felt valued regarding their wellbeing, professional development, and psychological safety. However, two in five respondents did not feel this way, leading to negative views of the organisation and higher levels of unmanageable job stress.

Findings from the annual surveys were the basis of a symposium held at RSA House to discuss how employee engagement can be harnessed to transform the UK economy. The symposium involved David MacLeod and Nita Clarke (EFS co-founders),

Paul Drechsler (CBE Chairman of the International Chamber of Commerce UK), Susan Clewes (CEO of ACAS), Neil Carberry (CEO of the Recruitment and Employment Federation), Dame Carol Black; David Dagger (Institute of Customer Services) Steven Weeks (Head of Engagement at NHS Employers) Ben Fletcher (Chief Operating Officer at Make UK), and Jennifer Sproul (Chief Executive at Institute of Internal Communication), and included a supporting statement from Archie Norman (Chairman of M&S). Future symposiums and events are planned.

Since its launch, the EFS Engagement Index has been validated and is informing both conceptual ideas and practice. The results are being used by EFS to guide the creation of new initiatives and projects, known as Thought and Action Groups. Findings from the annual surveys have influenced organisational practice, driven changes in how organisations gather and analyse their own engagement data, and sparked conversations around the changes in working practices.

To ensure open access and to conform with the ethos of Engage for Success, reports from the annual surveys are available to download free from their website and are supported by a series of events, workshops, podcasts and blogs. Data is available on request.

Work on the engagement agenda is ongoing. If the UK is to make Britain a superpower and ensure sustained and comparable growth to other G7 countries, a fundamental shift in the employer-employee relationship is needed. Organisations need to prioritise individual wellbeing, adopt a human-centered approach to employee experience, and reevaluate organisational purpose. By investing in their workforce and focusing on employee engagement, UK organisations can not only build resilience in the face of economic uncertainty, but also foster sustainable growth for the future.

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International Negotiations: Cultural Co-operation and Conflict between Haggling, Hurrying and Holding Out

Ursula F. Ott

At the centre of each international negotiation, whether it is political or commercial, is the conflict and co-operation between cultures. International negotiations can be divided into security, political and trade/economic negotiations, but all three areas are subject to the cultural bargaining patterns of the players involved. Research has shown that 'culture profoundly influences how people think, communicate and behave, and it also affects the kinds of deals they make and the way they make them'.

My original paper 'The Influence of Cultural Activity Types on Buyer-Seller Negotiations - A Game Theoretical Framework for Intercultural Negotiations' was the starting point to understanding one's own cultural profile and the opponent's cultural bargaining pattern to come up with more cooperative solutions. This framework provides a practical tool for analysing and navigating intercultural negotiations. Grounded in game theory, real-life observations and experiments, it uses 'cultural activity types' to predict bargaining behaviours and strategies.

The three main cultural activity types, developed by Richard Lewis (1996, 2006, 2018), which influence culture are:

Linear-active (task-oriented): Typically, Western cultures like the US and Germany, characterised by a focus on planning, efficiency, and direct communication.

Multi-active (people-oriented): Common in the Middle East, emphasising relationships, flexibility, and emotional expression.

Reactive (respect-oriented): Prevalent in the Far East, prioritising harmony, careful listening, and indirect communication.

The use of these cultural activity types helps us to translate bargaining characteristics into strategies and moves which lead to an outcome. This requires a more dynamic way of understanding the differences between cultures. Using game theory - the study of how people make decisions - gives us insights into how different cultural programs bargain.

Over decades of experiments, a pattern emerged which revealed that cognitive programming was very strong in the bargaining process. People tend to adapt to new cultural environments but when it comes to bargaining, the procedure of offering, rejection of offers, acceptance of an offer, making counteroffers, the length of the bargaining horizon and the use of price as a signal, is determined by cultural roots. The observations and documentation of real-world bargaining procedures showed consistency with the negotiation scenarios developed in the theoretical work. For example, the results of interactions between sellers and buyers of different activity types reflect the same cultural moves in international negotiations. The benefit of this approach is far-reaching. For example, political and business negotiations often suffer from premature terminations and stalemates where cooperation and success would be much more likely. However, it is possible to achieve a balance by bargaining longer than originally planned for and coming up with agreements which would otherwise be lost. This knowledge is particularly relevant for cultures with a short bargaining horizon.

Overall, the framework offers an anticipation of moves, strategies and outcomes for linear-active (Western players), multi-active (players from the Middle East) and reactive (players from the Far East). It can equip negotiators with the tools to anticipate cultural differences, adapt their strategies, and achieve more successful outcomes. Neglecting cultural considerations in international negotiations can lead to misunderstandings, breakdowns in communication, and ultimately, failed agreements.

The framework has already been applied to import-export negotiations, multinational headquarters-and-subsidiary negotiations, as well as international political negotiations.

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ReMed: Solving the challenge of small medical device waste in the health sector

Antouela Takou

The UK's National Health Service (NHS) contributes 4.6% of the country's total greenhouse emissions (NHS England 2022), of which more than 50% comes from medicines, medical equipment and the supply chain.

ReMed
Circular Economy for Small Medical Devices

Additionally, the healthcare system in England alone produces approximately 156,000 tonnes of clinical waste, of which a significant portion are single-use medical products (Tennison et al 2021).

This significant waste poses challenges for health systems and our planet. As global resource pressures grow and the NHS seeks to reduce its carbon emissions to meet its target of becoming carbon-neutral by 2040, the need for circular solutions is critical.

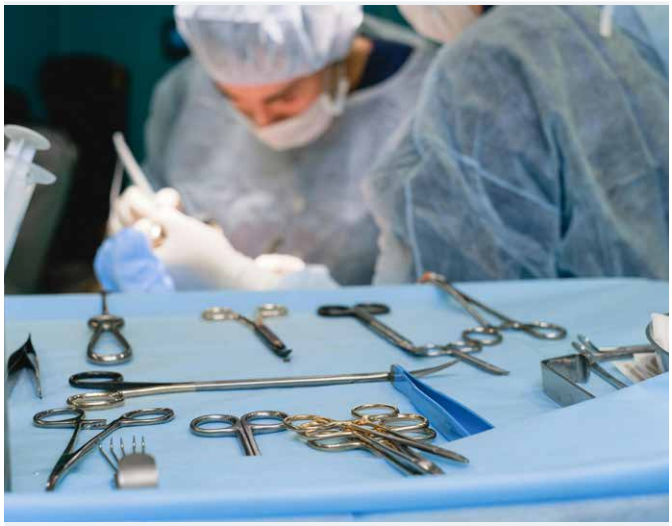
The challenge with Small Medical Devices

Small medical devices, such as syringes, small surgical tools, inhalers and blood pressure monitors, are often hand-held or portable and normally designed and manufactured using lower cost materials for a short life span.

With the explosion of medical treatments and the rapid growth in the number of patients seeking care, the quantity of small medical devices used has escalated in recent years.

Despite the rapid growth in the use of small medical devices, their current recovery, reuse and subsequent recycling of materials is limited. This is primarily because many of them are designed for single use, there is a large volume to manage or there is potential infection risk associated with their re-use and/or reprocessing. Their low value also makes their recovery economically unviable (infeasible).

Laparoscopic scissors, for example, are specialised surgical instruments used to make small incisions in the patient's body, normally the abdomen or pelvis, which is less invasive compared to open surgery operations. They are used in a range of surgical procedures such as bariatric surgery, urological or gynaecological surgeries. The majority of laparoscopic



scissors are single use, even though other versions such as fully re-usable or hybrid instruments, combining a reusable handle with a disposable scissor shaft, are now available. Currently all single-use laparoscopic scissors are disposed of as clinical waste and sent for high temperature incineration. High temperature incineration is expensive, and it poses environmental and health risks.

Inhalers are another unique type of medication, typically used by patients suffering from asthma, that are associated with high carbon dioxide emissions due to the release of gas into the atmosphere from their use. 73 million inhalers are prescribed annually (Chakma 2022) in the UK. Two main types of inhalers are currently used in the UK:

- pMDIs (pressurised metered-dose inhalers) that account for approximately 70% of UK prescriptions. They are propellant based devices and have a high carbon footprint emitting approx. 28 kg CO2e, equivalent to a 175-mile car journey from London to Sheffield.
- DPIs (dry powder inhalers) are a more sustainable version that is propellant free with lower carbon footprint emissions estimated at 0.6 kg CO2e, equivalent to a four-mile car journey. However, DPIs are not effective for all patients and moreover with the current design and materials used in production of DPIs, material recovery and separation are very challenging, meaning that material extraction is currently not possible.

The ReMed Project: Circular Economy Solutions for Small Medical Devices

Small medical devices are the focus of a project funded by the Engineering and Physical Sciences Research Council (EPSRC) called ReMed (remed.org). ReMed stands for ciRcular Economy of small MEdical Devices, and it is a research collaboration between three universities (Loughborough University, Nottingham Trent University and the University of Leeds) and industrial partners. The ReMed project is exploring how small medical devices can be re-engineered, reused, refurbished, and recycled to align with circular economy principles.

The Ellen MacArthur Foundation (https://www.ellenmacarthurfoundation.org/) defines circular economy as a system in which products and materials never become waste, retaining their value and quality for as long as possible, even beyond their shelf life.

NBS is leading on ReMed's business and operations work package, which aims to assess the feasibility of circular design options for small medical devices to support the transition from a linear model, where devices are disposed of after a single use, to a more sustainable, circular system that maximizes resource efficiency and reduces environmental impact and waste.

Using advanced simulation models, we are developing decision-support tools that can help members of the medical device supply chain (manufacturer, distributor, healthcare provider and reprocessor) to understand and plan how circular practices can be integrated into healthcare service delivery, without compromising patient safety or operational efficiency.

We compare linear economy against alternative circular economy scenarios whereby small medical devices are reused, repaired or recycled (materials extracted) to understand the impact into the future.

How the Models Work

The simulation models offer a digital representation of the flow of small medical devices over their lifecycle. Devices are tracked from the manufacture and procurement phase to their use and disposal at hospital or care facility, and/or their potential re-entry into the business cycle, which we call recovery chain.

The models consider a wide range of key performance indicators which can be tracked over time, these include material and production flows, transportation and operational, such as inventory management and lead times, adoption of re-use and circularity rates, cost implications and environmental impacts by quantifying waste and carbon emissions.

For example, for inhalers, we consider the impact of adopting alternative more sustainable types of inhalers, such as combining preventer and reliever inhalers into one device or circular product, designed for disassembly, with a reusable body and recyclable metallic cannister. We also consider more circular disposal options with the introduction of take-back schemes.

We explore a future scenario where the single-use laparoscopic scissors can be decontaminated and sterilised and then remanufactured for reuse multiple times. This model shows that the supply chain and recovery cost of hybrid laparoscopic scissors remains high compared to single-use and reusable scissors. The adoption of fully re-usable laparoscopic scissors leads to reduced costs versus single-use, while a significant reduction in emissions of up to 50% can be achieved when circular laparoscopic scissors are adopted.

Our models allow healthcare managers to visualise the long-term benefits of circular economy approaches.

Key Findings from ReMed Simulations

1. Reducing Waste through Reuse

Many small medical devices, currently treated as medical waste, could be safely reused if proper sterilization and maintenance protocols were followed. By using reusable devices instead of single-use items, the NHS could reduce waste and lower the demand for new raw materials. Our models show that introducing reusable laparoscopic scissors for example could reduce waste generation by up to 50% in their second cycle of use compared to using single-use ones. This however requires change in regulatory standards to enable in practice.

2. Cost Savings

While the upfront costs of transitioning to circular models—such as investing in cleaning, sterilization, refurbishment and remanufacturing facilities processes—can be significant, the long-term financial benefits are promising. The models demonstrate that the cost of refurbishing a small medical device is often a fraction of the cost of purchasing a new one. This finding is crucial for a healthcare system like the NHS, which operates under tight budget constraints.

3. Supply Chain Resilience

The COVID-19 pandemic revealed vulnerabilities in the global supply chains that the NHS depends on for medical devices. Circular economy offers a means to reducing this dependency by fostering a new approach to managing waste and reclaiming materials of once used equipment. This enhances supply chain resilience by ensuring that the NHS is less reliant on the timely delivery of new devices from international suppliers, mitigating potential shortages in times of crisis.

Conclusion: A Circular Vision for Healthcare

We recognize that achieving a circular economy is a complex endeavour that requires coordinated efforts among diverse stakeholders. The ReMed project offers a step forward towards creating a more sustainable health system. Our simulation models provide a practical, data-driven framework to test how the integration of circular economy principles in healthcare, can reduce waste, lower costs, and improve product availability in the supply and recovery chains.

As the NHS moves closer to its carbon-neutral target, circular models for small medical devices offer a significant step change towards achieving these goals. The work of the ReMed project is helping to show that by rethinking how we design, use, and dispose of medical devices, we can build a healthcare system that not only saves lives but also preserves the planet for future generations.

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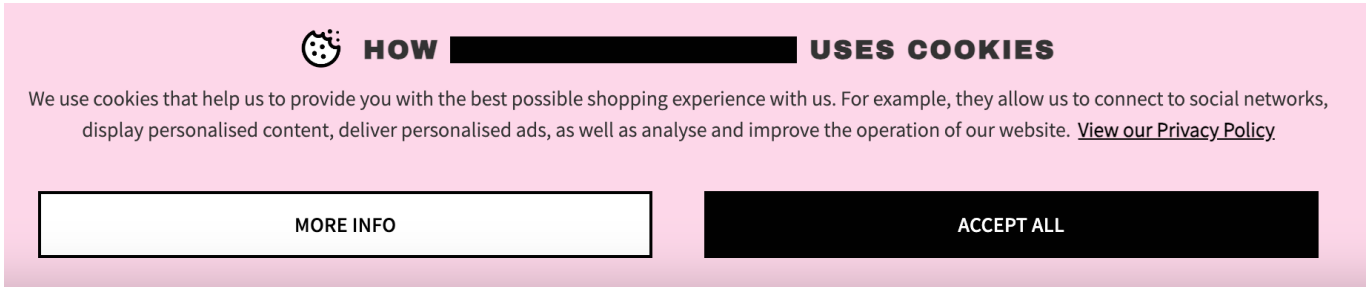
The Dilemma of GDPR-2018 and The Privacy-Personalisation Paradox

Fatema Kawaf



In a recent research paper, Professor Kawaf, Director of the Marketing and Consumer Studies Research Centre at Nottingham Business School, and coauthors explore consumers' experiences in GDPR2018-regulated environments by addressing the question: How do consumers experience privacy, data collection, and personalisation when using digital services regulated by GDPR-2018?

The collection and processing of personal data is central to a personalised and relevant digital experience. Without personalisation, the web would be irrelevant, unusable and totally overwhelming, and while consumers might respond unfavourably to questions around using their personal data for a personalised experience, existing research tells us that given the choice consumers would always choose personalised environments.

Effectively, it is almost impossible to imagine a digital

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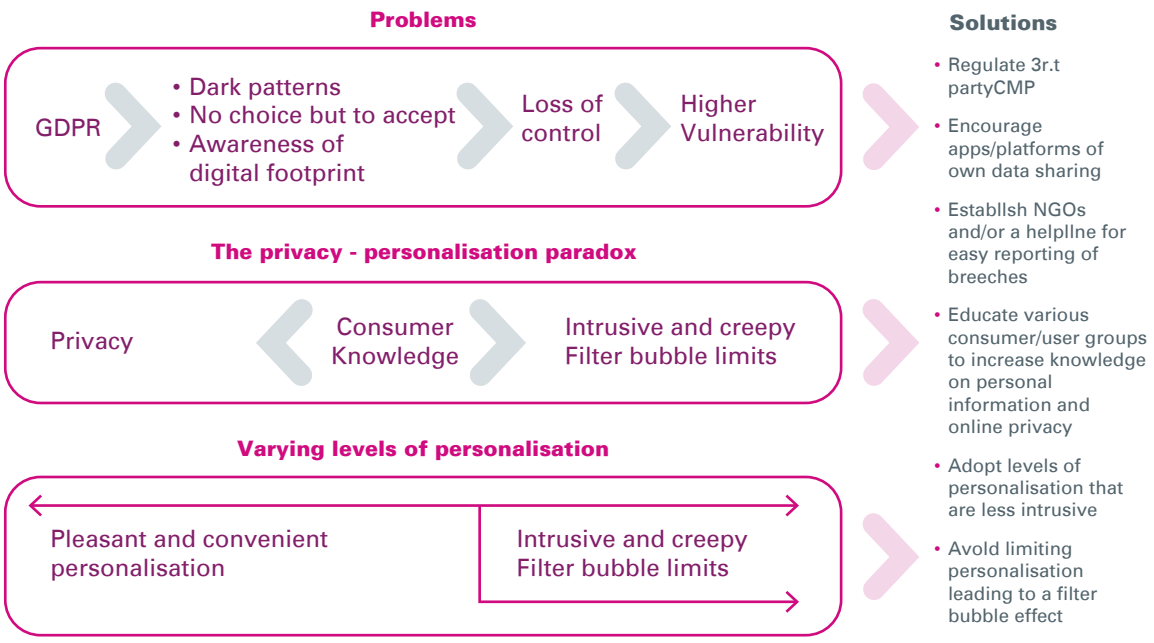

Figure 1. Identified problems, policy implications - solutions

Source(s): Authors' own creation

Figure 1 Kawaf, et al. (2024)

world without personalisation. The backbone of all this personalisation is user data. This vast amount of data across multiple channels and devices, coupled with AI processing capabilities that far exceed the human ability, has led to an urgent need for action.

In 2018, the General Data Protection Regulation, or GDPR, came into effect in the European Union, aiming to give consumers more transparency and control over their personal data. The most popular implication of it is the mandated update of all websites to their privacy and cookie use policy, which resulted in almost all webpages creating pop-ups that seek users' permission to use their cookies, such as the one below.

GDPR2018 came with big promises, but has it delivered on those promises? We explored what consumers think.

Precisely, the research team set to find out whether GDPR2018 has actually made a difference in how we experience privacy online. Through a set of in-depth interviews with both average users and digital experts, this work shines a light on the complexity of this issue in three key areas:

1 More vulnerability, less control

On the one hand, GDPR2018 has increased users' awareness of data collection practices, increasing transparency regarding the type and potential size of personal data being collected.

But on the other hand, many users still feel a lack of control over their information and how it will be used. As one participant put it: "You feel like every time you go online, you're open, you're exposed, and just nothing is standing in the way of your information."

This sense of vulnerability stems largely from concerns about our digital footprints - all the data trails we leave behind as we browse and interact online.

Users worry about how this information could be used against them in the future, who might use it and for what purposes.

This concern is further intensified when news of data leaks and data misuse is shared in the news. While GDPR requires websites to get consent for data collection, many feel pressured to blindly accept cookie policies just to access content.

This feeling of pressure is not coincidental. Several websites have resorted to dark patterns and complex forms that make it easier to click accept, make it seem like the only option, or hide the alternative option 'decline/reject' behind several layers or by unticking an unreasonable number of boxes.

2 A privacy paradox?

Existing research suggests a privacy paradox in which users are aware and concerned about privacy risks. Yet, they continue to engage in activities that result in the sharing of their personal data, compromising their privacy.

Our research shows that although regular users are aware and feel vulnerable about data collection, they are willing to accept it in return for benefits in functionality. One critical issue here is that users perceive that it is often no longer possible to browse or even access some websites without accepting cookie policies.

We uncover differences between users navigating exchanges of data and functionality, who often feel vulnerable and lack adequate control, and the digital experts who consistently feel more confident and in control of their data collection and use. This suggests that education and knowledge play a key role in managing online privacy effectively, something future regulations must address and implement.

3 Personalisation gone wrong

Consumers have mixed feelings about personalisation, they often refer to the fine line between helpful personalisation and creepy intrusion. As one participant noted: "Facebook's algorithm, while it might seem like a convenience, it can actually create sort of these weird silos, where the more you start liking certain stuff, the more it shows you that stuff, and then you stop getting a balanced perspective."

So, what can be done to address these issues? We suggest several potential solutions highlighted in the figure below, including better regulation of consent mechanisms to eliminate deceptive "dark patterns", better education on digital privacy practices, and more granular control over what data users share and how it's used. Ultimately, the study highlights that while GDPR was a step in the right direction, there's still work to be done to truly empower consumers in the digital age. As we continue to grapple with these complex issues, staying informed and advocating for our rights will be key.

Reference

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Improving inpatient support for mental health in hospitals of the future

Steve Brown

The first time I went into a psychiatric hospital was as a new lecturer visiting one of my personal tutees who had been recently admitted. That visit made we want to understand more about how hospitals function as complex organizations. It led to a programme of research within inpatient psychiatric settings, focusing on the experience of being detained and how people work in and manage psychiatric units.

The experience of being involuntarily detained in a mental health inpatient unit can be quite scary and overwhelming. Detention or 'being sectioned' usually happens during extreme moments of personal crisis. It can result from intervention by specialist community psychiatric nurses or the police. Sometimes it is the outcome of self-harm or involvement in a life-threatening situation.

A stay in a psychiatric hospital can last a few days or weeks or stretch on for many months. Some people even end up in staying for a number of years. This may sound like something that is quite out-of-the-ordinary, but at any one time in the UK there are roughly 100,000 people in psychiatric inpatient care, and it is commonly observed that over the course of our lives, 1 in 4 of us will experience a mental health crisis.

I was originally trained as a psychologist and my long-term interest has been how organized settings - including hospitals, schools, care homes and other institutions - transform and shape how we think and feel about ourselves.

Organizations are not just places where we work, study or are cared for, they quite literally form us into the kinds of people that we are on the way to becoming. I want to understand how that happens and how the organizational processes and services involved can be restructured to forge better and more meaningful lives.

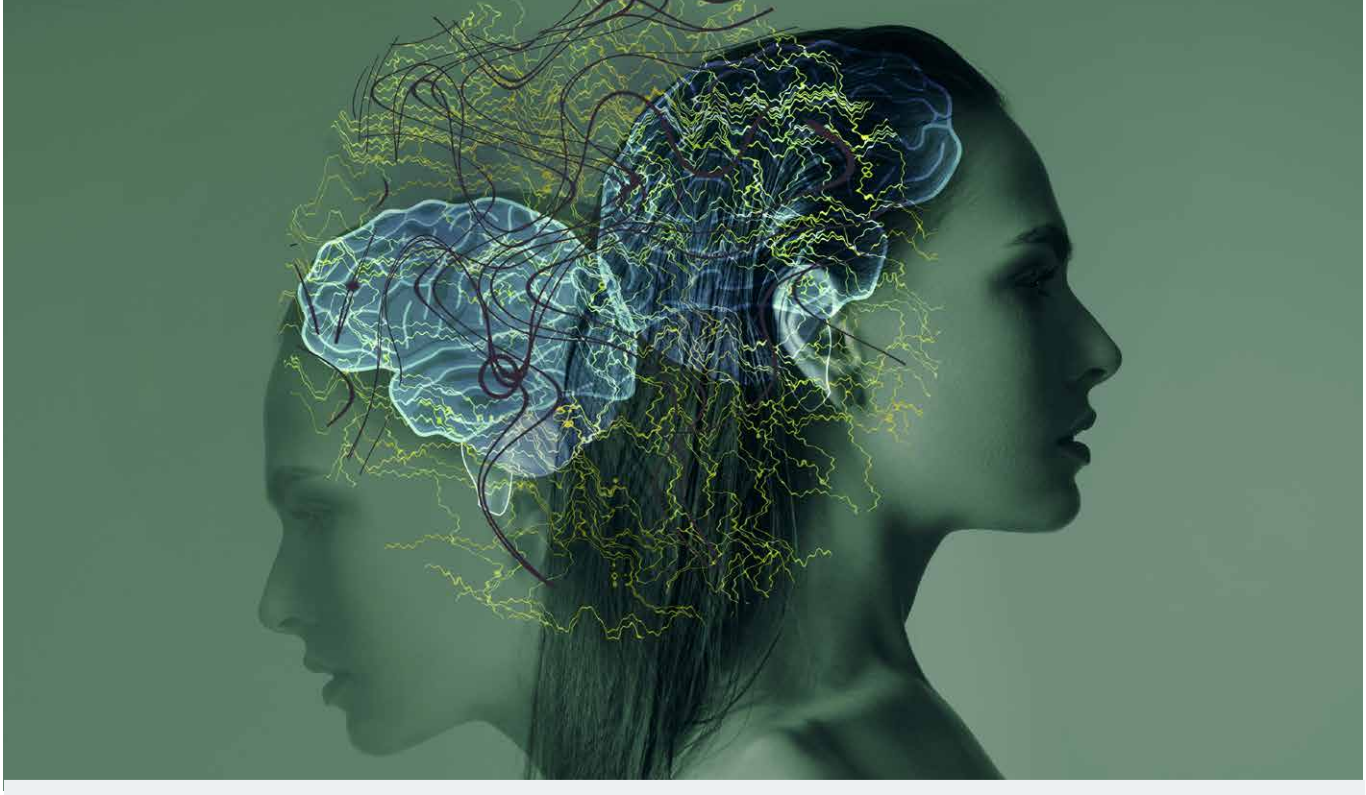
One of the first projects I was involved in with my long-term collaborator Prof Paula Reavey (London South Bank University) was a study of sexuality and relationships in a medium-secure forensic mental health unit in Greater London. The patients in this unit had typically been transferred from prison because of their significant mental healthcare needs.

Detention in prison is partly focused around rehabilitation or preparing prisoners for a life beyond offending. Detention in a forensic hospital, by contrast, is mostly about stabilization, ensuring that the patient is 'well enough' to either return to prison, or continue their care back in the community. This can leave patients without any guidance or education about how to form or maintain relationships. We know that the single most important factor in mental health recovery is a sense of being valued or loved by others. What patients told us is that they felt instead that they were getting messages that sexuality was 'dangerous', and they were not really deserving of having relationships in the future.

Our research showed that this lack of organizational concern about sexuality and relationships causes considerable problems for patients once they were discharged and was a barrier to recovery.

In subsequent work, we built upon this and have shown that the lack of comprehensive policy in this area is in tension with some of the positive work that nurses, social workers and healthcare assistants informally do with patients. We have argued that whilst there are organizational risks in having policies around managing sexuality and relationships, the greater risk comes from having no policy at all, which just transfers all the problems back to ward staff.

We have since collaborated with St Andrews Healthcare to develop the first specialist policy and guidance toolkit for patients and staff in the UK and are in the process of extending this work nationally.



Alongside this work, I have acted as a trustee of the charity Design in Mental Health Network, UK, where I manage Research & Education services. The charity brings together people who use mental health services with clinicians, healthcare commissioners, designers, architects and manufacturers to advocate for better and more person-centred inpatient design. Our annual conference looks like a strange mix of academic conference with a trade exhibition, but it successfully brings together the people who commission hospitals with those who build them to listen to the voices of the people who are cared-for (or not) within them. Working for the charity has helped shape my expertise around what can go wrong in designing and building hospitals, usually as the result of the people who use the services not being adequately represented or consulted during the process.

Bad designs create organizational problems which ultimately end up impeding rather than enhancing recovery. For example, my work with colleagues has shown the importance of sound - from levels of noise and quiet places to music and television - in psychiatric care. Staff 'tune in' to sound in very subtle ways to do their work, and control over sound levels, music and television can have significant impact on patients.

My current work looks at seclusion facilities, which are small bare-fitted rooms where patients are temporarily placed to reduce aggression. There rooms are universally loathed - staff hate using them and patients feel violated being placed there. A major European study showed that patients who have been secluded spend an average of 25 more days in hospital than non-secluded patients. And yet seclusion rooms keep being used because if you take them out of the unit, staff are forced to lock aggressive patients in the bedrooms instead. I want to know what the decision-making process is that ends up with decisions to seclude and how different built environments, types of patients and ways of working affect this process. I also want to imagine what a different kind of facility might look like, perhaps one that could instead be a 'space of retreat'.

You might well be asking why this kind of work is being done in a Business School rather than in Psychology or a Medical School. We have a real opportunity as researchers who know a thing or two about people, work and organizing to offer a uniquely holistic approach to understanding how the rich and complex 'lived experience' of organizations intersects with the formal ways that goals and objectives are implemented. It's often paradoxically the case that organizations 'work' in spite of the formal mechanisms through which they operate, that the 'unintended consequences' of organizing are as or even more important than the outcomes that were meant to be accomplished.

I have also come to believe that our mental health is not just something that happens 'at' work, but rather is shaped 'through' work, and that there are significant challenges for the future in understanding what the responsibilities and boundaries are for employers and employees around this relationship.

More information about the Design in Mental Health Network UK can be found here: https://dimhn.org/.

Steven Brown is Professor of Health & Organizational Psychology, Nottingham Business School.

The Goodness Metric: Helping charities to measure and report social impact

Akriti Sharma, Karl Landström & Mollie Painter

Nottingham Business School (NBS) has joined with St. John of God Hospitaller Services (SJOG) in a knowledge transfer partnership to develop what we call the Goodness Metric.

Societal impact is something that charities, and universities alike, strive for. In this article, Mollie Painter, Karl Landström and Akriti Sharma explore the ways in which charities can be supported to evidence the benefit or their work. Many charities in the UK face a significant challenge in measuring and reporting their social impact, both in terms of knowing how to go about assessing such impact, and in identifying appropriate metrics to capture what social impact is in practice.

Additionally, many charities lack the resources needed to effectively report against Sustainable Development Goals (SDGs) and Environmental, Social, and Governance (ESG) metrics.

Measuring social impact is challenging because it requires more than just reporting on numbers. Instead, observation, interpretation and an understanding of the interrelatedness of a variety of socio-economic variables are required.

Assessment of the complexities of social impact is also time-consuming and existing auditing and reporting mechanisms are often too expensive for many third sector organisations.

Despite these challenges, charities are under increasing pressure to report their social impact. Social impact reporting has become increasingly important for charities across the UK as different stakeholder groups, including funders, demand greater transparency, accountability and evidence of the impact of their investment. To address this challenge, Nottingham Business School (NBS) has joined with St. John of God Hospitaller Services (SJOG) in a knowledge transfer partnership to develop what we call the Goodness Metric.

St John of God Hospitaller Services is a UK-based charity that provides care and support to vulnerable individuals, including those with learning disabilities, mental health challenges, and homelessness. Together we are working to develop a flexible, yet values-based toolset designed to help charities to assess, evaluate, and report on their social impact via a combination of qualitative and quantitative methods. This toolset is designed to support charities in creating a framework for reporting in alignment with ESG and SDG standards. One of the key complexities charities face lies in the fact that most existing metrics are tailored with for-profit organizations in mind, making them challenging to adapt to the non-profit sector. In contrast, the Goodness Metric offers several advantages.

In the short term, it establishes a common language for impact reporting, which can be tailored to meaningfully assess the social impact of a wide variety of third sector organisations.

In the long term, it will set a benchmark for quality within the charity sector, ultimately elevating the standard of impact assessment and reporting for charities. Ideally, charities could come to view the ongoing assessment of their social impact as an asset and helpful tool, rather than as a burden.

Behind the Goodness Metric is a collaboration between SJOG and two of the research centres in

NBS, the Centre for People, Work and Organisational Practice and the Responsible and Sustainable Business Lab.

Led by Professor Daniel King and Professor Mollie Painter on the NBS side, the collaboration represents a powerful synergy of practical experience and academic expertise. Rooted in values of dignity, respect, and inclusion, SJOG brings invaluable deep understanding of community health and well-being, as well as social impact that is combined with the cutting-edge research capabilities and academic rigor of the NBS research centres.

Together, they create a robust framework for developing innovative metrics and tools for measuring social impact. This collaboration is particularly well-suited to improving the quality and accuracy of reporting in alignment with ESG and SDG goals. By combining SJOG's real-world expertise with NTU's theoretical foundations, this partnership has the potential to set new benchmarks in the sector, benefiting both organizations and society at large.

The Goodness Metric is a new process-driven toolset to assess, evaluate, and report on organisations' social impact. The toolset will articulate best practice in meaningful processes and principles, while being flexible enough to apply to a broad range of charities. The Metric will be relevant to the 165,000 charities across the England and Wales (NCVO, 2022) - a sector worth £20.2 billion to the economy.

Through activities such as workshops, interviews, and co-design sessions with key stakeholders, we have uncovered and leveraged latent knowledge to develop a process-driven toolset. These activities allow us to engage deeply with the experiences and challenges of those who will use the tool, ensuring that it not only meets their needs but also addresses the often unspoken complexities of impact measurement in the charity sector. By continuously involving stakeholders throughout the process, we ensure that the tool is both practical and rooted in the real-world challenges they face.

Akriti Sharma is building the Goodness Metric - a process-oriented toolset to assess, evaluate, and report on organisations' social impact for SJOG in partnership with Nottingham Trent University as a KTP associate

Dr. Karl Landström is a Research Fellow in the Responsible and Sustainable Business Lab

Professor Mollie Painter is the director of the Responsible and Sustainable Business Lab (RSB Lab) and is an Extraordinary Professor at the Gordon Institute of Business Science, University of Pretoria

Unlocking Community Insights: Could the Voluntary Sector transform social research

Daniel King

Understanding the lived experiences of diverse communities is becoming increasingly crucial for effective social research. It brings depth and authenticity to social science analysis, capturing how individuals and communities experience, navigate, and respond in real life, particularly to understand the nuances of how different groups, especially those underrepresented in research, experience different situations.

Traditional methods like interviews, surveys, and focus groups often fail to fully engage marginalized communities, leaving their voices unheard and perspectives underrepresented.

As a result, these communities are treated as subjects rather than active partners in the research process. Moreover, when engagement does occur, communities often report not receiving any direct benefits from research participation.

Instead, they feel over-researched and suffer from

research fatigue, which fosters an exploitative rather than mutually beneficial relationship. This not only diminishes data quality - it also risks undermining the very communities that the research is designed to benefit. There is an urgent need for approaches to research that are more inclusive and reciprocal.

Moreover, our responsibility as social scientists is to consider research practices that ensure the burden of future research does not always fall to the same communities, and that these communities receive something in return for their participation.

This raises the question of how social scientists can reimagine research practices to prevent the ongoing burden of study participation from disproportionately impacting the same communities, while ensuring these communities benefit meaningfully from their involvement.

Unlocking the information that the Voluntary, Community and Social Enterprise Sector creates

In response to these challenges, we're conducting a one-year investigation, funded by the Economic and Social Science Research Council, into how to develop a data collection infrastructure that uses the information that the Voluntary, Community, and Social Enterprise (VCSE) sector already creates.

VCSE organizations work directly with diverse, often marginalized communities across the UK, providing essential services and building trusted relationships over time. They work across a wide range of fields that social science researchers are interested in, from environmental sustainability, health and social care, the arts, sports, and community development.

Thousands of VCSE organisations work in close proximity to the communities they serve and have trusted relationships with diverse, marginalised and under-represented people and groups.

Most importantly, for our purposes, as part of their everyday activities, they routinely collect information about these communities for varied purposes including mapping exercises, community engagement activities, needs assessments, project monitoring, impact evaluations, organisational diagnostics, and much more. Whether it is understanding the lived experience of someone experiencing modern-day slavery, through to collecting information on injuries at amateur sporting events, VCSE organizations collect a lot of information that could tell us important things about society.

Therefore, the VCSE sector plays a crucial role as a data producer, uniquely positioned within society due to its proximity to communities and its direct engagement with societal challenges.

Its information holds a wealth of knowledge that could inform social science in ways that reflect community realities more accurately. However, it is currently locked and inaccessible for researchers, stored on individual computers or within single organizations.

Moreover, the information collected is often gathered inconsistently and remains largely unstructured and inaccessible; thus, its potential as a source of insight-rich, locally situated, and nuanced research data is lost.

Understanding the feasibility of unlocking this information

To explore ways of unlocking these insights, NTU's VCSE Observatory, alongside the British Red Cross, DataKindUK, and the University of Strathclyde, are examining the feasibility of transforming this unstructured information into data for research purposes.

We are not only consulting with social science researchers to understand their needs but also creating prototypes from the information produced by the VCSE sector. We will use these prototypes to explore how the information can be transformed into research data and to see how it could help social science researchers answer their existing research questions or even inspire new ones.

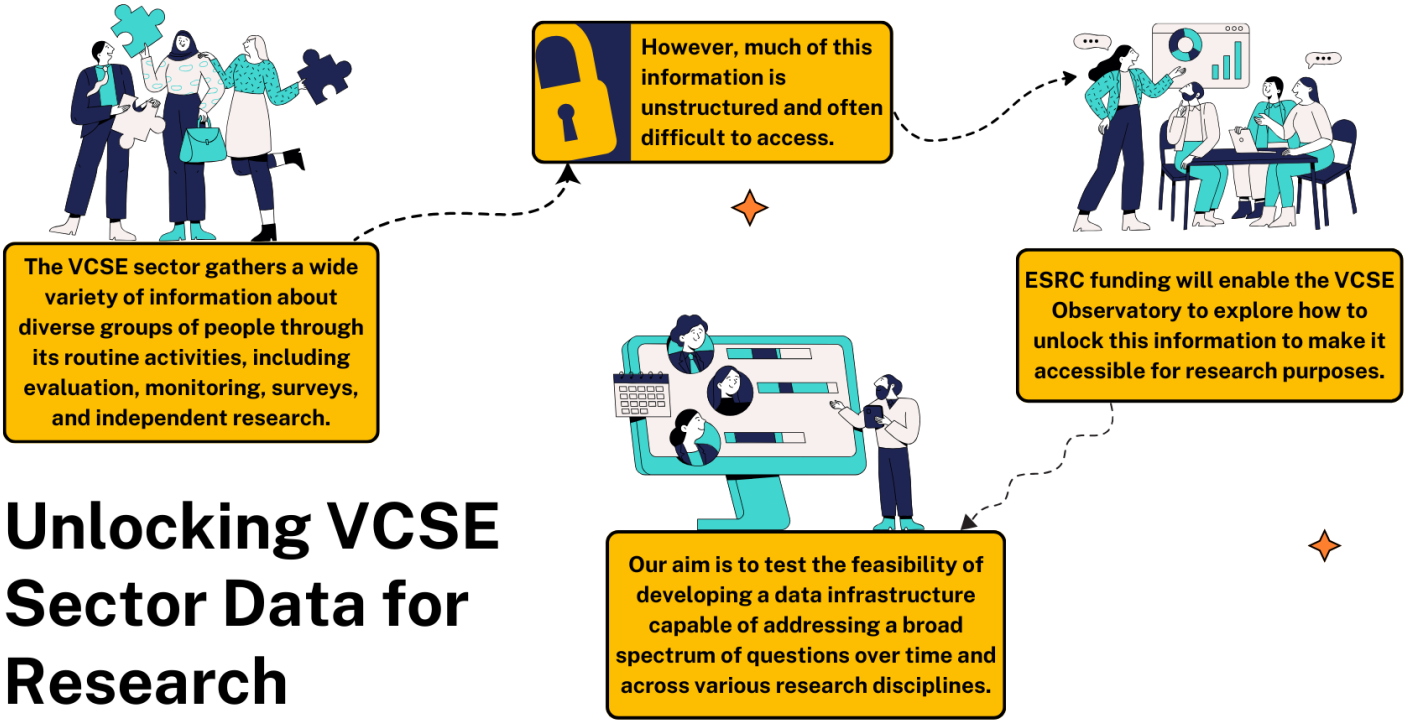
We have some ideas already. We are looking to

explore if evaluation reports can be run through Large Language Models (LLMs) to extract insights; we are working with an organization who run a volunteer booking system to see if this can help us understand volunteering patterns better; and exploring the possibilities of understanding wellbeing better if VCSE organizations collect information about their volunteer and beneficiary wellbeing in more standardised ways. These examples highlight the possibilities that could come from this approach.

building trust and ensuring mutual benefit between researchers and the communities they serve.

Long-term strategy

Our vision is to create a sustainable, community-centred data infrastructure that benefits both researchers and communities. By enhancing the VCSE sector's potential to contribute nuanced, locally informed perspectives, we hope to create research that more accurately reflects society and its diverse needs. This infrastructure aims to equip researchers with high-quality data, enabling them to ask and answer questions that address complex social issues and inform policies and programs that directly benefit communities.



Unlocking VCSE Sector Data for Research

In partnership with...

Building this infrastructure comes with challenges. Insights from VCSE organizations are often deeply personal, reflecting lived experiences. Handling community insights responsibly requires prioritizing ethics and treating sensitive information with care. To safeguard this information, we will explore the ethical, legal, and privacy standards to maintain community trust.

Practical challenges also exist, such as standardizing data from various organizations with different collection practices. Our framework must balance accessibility for researchers with usability for VCSE organizations, ensuring valuable information is shared without compromising data quality or privacy. We will pilot ways to transform unstructured information into research data, without placing undue burden on them. This goes beyond compliance - it's about

In the long term, this project has the potential to transform social science research into a more inclusive, equitable field. Rather than studying communities from a distance, researchers would be engaging them as partners in knowledge creation, working collaboratively to uncover insights that drive meaningful change. This reciprocal data collection framework is a step toward a model where community voices are integral to research design and outcomes, leading to findings with greater public benefit and relevance.

Professor Daniel King is Co-director for the People, Work and Organisational Practice Research Centre, Nottingham Business School.

“How we do things around here” - tackling organisational culture to create sustainable change

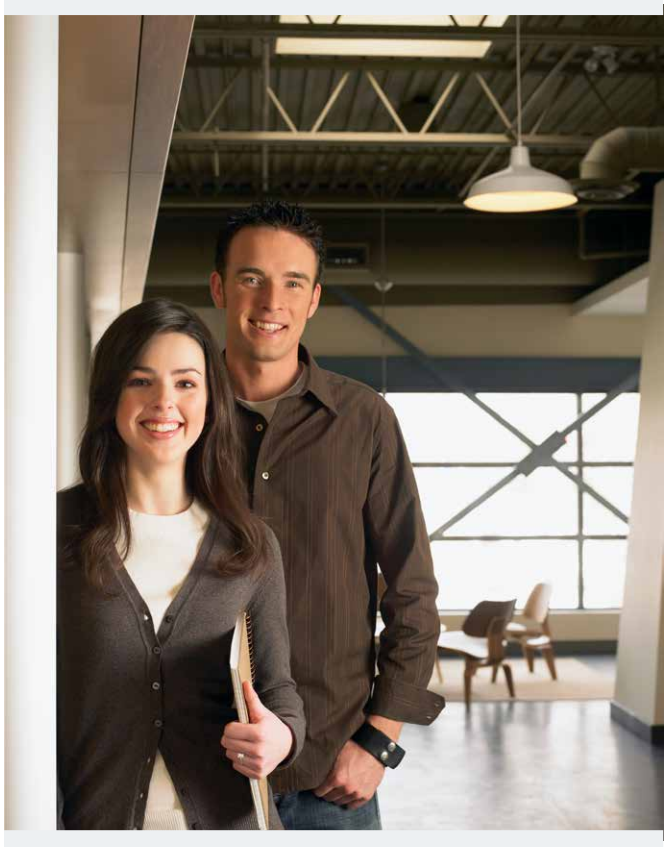
Zara Whysall

Organisational culture exerts a powerful influence on every organisation, affecting employees’ decisions and actions, for better or worse. A strong and aligned culture has been shown to strengthen an organisation’s operating capacity by reducing the uncertainty and ambiguity employees experience. Culture also often hinders attempts to achieve sustainable change or transformation, despite the best interests and attempts of leadership. This makes fostering a positive culture, which is enabling of the organisation’s strategic ambitions, a priority for all leaders.

Testament to this, in recent years there has been an amplification of interest amongst regulators, economists and business leaders in the role of organisational culture. A significant trigger was the identification of culture as a key root cause of the major failings in the UK banking crisis. Specifically, it was identified that major failings arose due to a mismatch between surface-level culture in terms of organisations’ stated values, and the ways of operating followed by employees.

Misalignment between levels of culture is a serious and widespread issue likely to be affecting many organisations across industries, yet one that can go undetected. Indeed, it is why the UK Corporate Governance Code amended in 2024 (effective 2025) now requires boards not only to assess and monitor culture, but also how the desired culture has been embedded. In other words, it requires that all directors not only actively promote the desired culture, but satisfy themselves that the company’s purpose, values and strategy and its culture are all aligned. What does this mean for leaders? This means moving beyond the surface to ensure that, first, you are clear on the type of culture needed to enable your strategy and, second, the desired culture has been embedded effectively. This will not be achieved by actions such as superficial culture audits or the cascading of a new set of corporate values. Instead, focus needs to shift towards ensuring that surface level culture (e.g. strategic objectives, policies, and formal processes) align with informal processes, everyday organisational practices and behaviours.

Since 2021, I have been working with organisations to improve the way organisational culture and culture change is measured and managed. The foundation



for this work rests on taking a different approach to understanding and shaping culture, which adopts a maturity matrix approach to:

- Provide greater clarity on the types of culture - specifically, the behavioural norms - that would enable the organisation's strategic objectives;
- Make explicit the current standard behaviours in these key areas, or in other words, 'how we do things around here', and the gap between current and desired;
- Provide a roadmap in terms of aspirational normative behaviours, policy and process development;
- Offer a means by which cultural change and maturation can be tracked;

A cultural maturity matrix identifies the critical criteria to focus on within a particular culture, depending on the organisation's strategic objectives. For instance, if innovation is central to the strategy, then it might include how mistakes and setbacks are handled, how decisions are made or how conflict tends to play out. It then assesses current behavioural norms in these areas against 4 or 5 stages of maturity, by providing evidence-based descriptors of what this looks like in more or less mature organisations.

Critically, this approach helps to integrate and align

levels of culture, providing a roadmap for the development of both formal, espoused, or objective aspects of the culture (e.g. policies and processes) and informal or subjective elements (e.g. perceptions of policies and processes, and observed behaviours). At level one, for example, relevant policies, processes, and/or practices are either non-existent, chaotic or ad-hoc. At level 2, formal policies, processes, and/or practices are emerging or have been made explicit, but adoption is isolated or inconsistent.
At level 3, relevant policies, processes, and/or practices are widely adopted and implemented in a disciplined way. At level 4, formal policies, processes, and informal practices are fully aligned, implicitly integrated and adaptive. In other words, it has become 'how we do things around here'. In contrast to assessing culture against a generic framework, it provides clarity and specificity in terms of the changes needed in each specific organisation to move towards desired future states of cultural maturity, dependent on the organisation's strategic priorities. Furthermore, by making the intangible more tangible, this allows current and future/aspirational cultural norms to be widely communicated, understood, then encouraged, observed by others, subsequently approved and ultimately widely re-enacted. In a global technology organisation I worked with, via a Knowledge Transfer Partnership, this involved development of an innovative maturity matrix-based tool to measure culture and track change. Associated resources to achieve change in the behaviours that we identified as key enablers of their business strategy were designed and implemented across 3000+ employees, 50+ senior stakeholders and 400+ managers. After 3 years, the organisation reported that the project had:

- Transformed their ability to understand, articulate and measure the impact of culture on employee and customer experience.
- Collect reliable data on culture, used by managers and teams to identify priorities and track change.
- Developed tools to overcome individual, team and organisational barriers to inclusion, innovation and learning, empowering individuals to co-create culture.

The business reports that it is now equipped to measure culture change progress over time, contributing to sustainable change and maturity, and describes its transformational effect as having "…transformed how we think about culture and empowered us to take data driven decisions to improve it. It has delivered beyond our expectation and is driving real change in our focus and action."

Dr. Zara Whysall is Associate Professor of Business Psychology at Nottingham Business School.

Measuring Local and Regional Competitiveness to Ensure Sustainable Success

Robert Huggins and Piers Thompson

Disparities in the economic and wider social outcomes enjoyed by residents of different areas in the UK have long been noted.

Local and regional competitiveness is a concept that identifies the potential to close these gaps in a long-term sustainable fashion.

The UK Competitiveness Index (UKCI) seeks to capture those factors leading to the long-term success of areas, and importantly the outcomes experienced by the population of the area.

It is a composite benchmarking tool that captures the competitiveness of local authority district areas of Great Britain allowing policy makers to assess their current position, relative to comparator areas and how this competitiveness evolves through time. Originally developed over 20 years ago, the index is regularly used by policy makers to assist with strategy development.

One aim of the UKCI is to overcome the misconception that competition and competitiveness must always involve winners and losers whereby the winner often takes all with a minority gaining at the expense of the majority.

This can come from imposing conceptions of business competitiveness onto the context of local and regional performance. This needs not be the case as while regional competitiveness can involve a 'low-road' route based on cost cutting job losses and low wages, there is also a 'high-road' approach whereby firm and skilled labour attraction and retention is a key feature of success.

Particularly in the case of the latter, interconnections between areas mean that surrounding areas will gain from employment and trading opportunities created, and benefits will spillover from one area to another. For the resident population, this high-road to competitiveness will ensure high quality well remunerated jobs, and as such, local competitiveness is associated with broader measures of well-being.

The UKCI itself focuses on this 'high-road' approach and contains three 'sub-indices' - Input, Output and Outcome (Figure 1). In basic terms these can be considered to reflect the resources available to generate high value production (Input Index), the extent to which high value outputs are generated (Output Index), and the extent that these result in positive outcomes for the resident population (Outcome Index).

These are consistent with the view that competitiveness can be captured both in terms of inputs that should improve output (input or process competitiveness), but also through the outcomes achieved (outcome competitiveness). By ignoring one or the other the full picture will be missed.

Although it might be expected that competitiveness will flow from inputs, through outputs to outcomes, the process, in reality, is unlikely to involve effects going in just one direction.

In order to attract and retain highly skilled members of the population it is important that well paid employment opportunities and low levels of unemployment are present.

This means that resources not only determine outcomes, but that outcomes determine the resources

present in the future. The UKCI therefore combines these three sub-indices to give an overall value for local competitiveness.

Figure 1- The 3 Factor Model Underlying the UK Local Competitiveness Index

Input factors

Economic Activity Rates

Business Start-up Rates per 1,000 Inhabitants

Number of Business per 1,000 inhabitants

Proportion of Working Age Population with NVQ Level 4 or

Proportion of Knowledge-Based Business

Output factors

Gross Value Added per head at current basic prices

Productivity - Output per Hour Worked

Employment Rates

Outcome factors

Gross weekly pay

Unemployment rates

Source: Huggins et al. (2023) UK Competitiveness Index 2013, School of Planning and Geography, Cardiff University: Cardiff

With British local authorities being required to produce economic plans, the UKCI provides a tool for making comparisons with other areas in these reports and in recent years it has been utilised by more than 60 local authorities and related local governance partnerships in the UK.

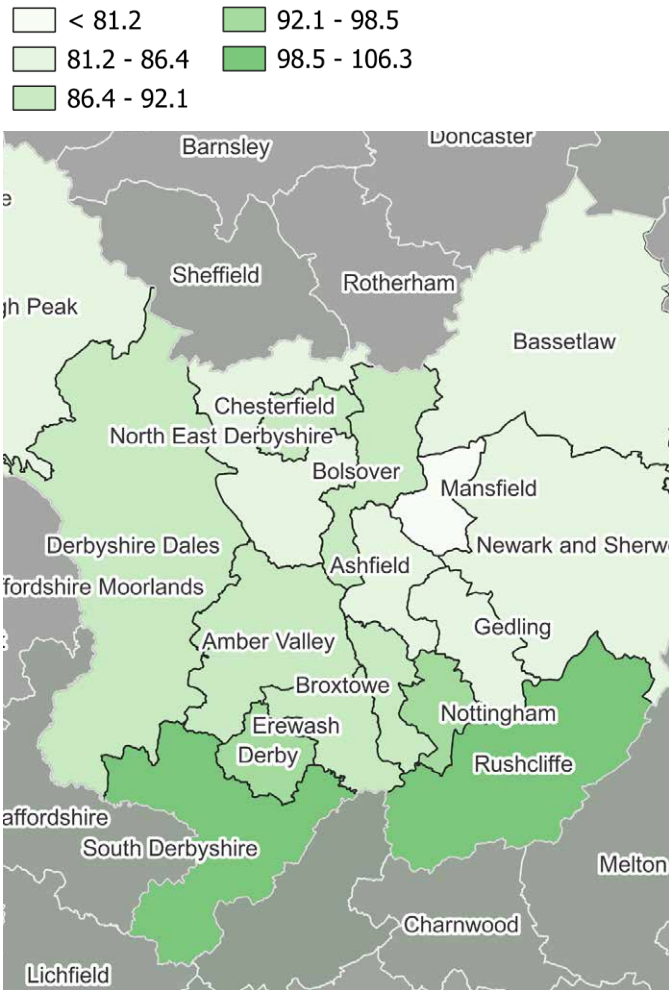
Work has been commissioned by Swindon and Wiltshire LEP, D2N2 LEP and the Cardiff Capital Region City Deal to undertake a deeper analysis of their own competitiveness relative to similar areas.

Such work also helps these bodies to understand the different challenges faced within their borders. For example, Figure 2 clearly shows the differences in competitiveness present within the new East Midlands Combined County Authority area.

These disparities indicate the importance of understanding both inequalities between regions, but also within regions. If these inter-regional differences are not understood, and the deep-rooted sources of such differences ignored, there is a danger that policies may fail.

The failure of the previous UK Conservative government to level-up the nation being a case in point. In this regard the UKCI provides both a tool for local and regional areas to consider not just current outcomes for residents and how they have evolved, but also the potential to improve these in the future.

Figure 2- Competitiveness with East Midlands Combined County Authority UKCI 2023



Notes: UK Average = 100

Research based on measures such as the UKCI must be aware of the limitations of the measures they are based upon, especially soft factors such as human behaviour, institutions and networks that are not easily captured and prevents a full understanding of how regions develop.

Nevertheless, these measures provide important tools, which can also seek to identify influences such as cultural factors that can hinder or hold back competitiveness and long-run sustainable prosperity.

Robert Huggins is Professor of Economic Geography, School of Geography and Planning, Cardiff University.

Piers Thompson is Professor of Local and Regional Economic Development and Co-Director of Research Outputs, Nottingham Business School.

Sustainable Work Practices in the UK Food Delivery Sector: Addressing Fair Work Challenges

Nadia Kougiannou

The food delivery sector in the UK operates mainly within the gig economy and presents significant challenges regarding sustainable work practices.

Sustainability in this context extends beyond environmental factors, addressing workers' social and economic well-being.

The precarious nature of work in the gig economy, where workers are often classified as self-employed contractors, raises concerns about fair work practices. These concerns include worker rights, pay security, safety, and their ability to build collective and individual power resources. This article draws on our recent research in the UK food delivery sector to explore these issues.

Challenges in the Gig Economy: Precarious Work and Economic Sustainability

The gig economy has seen rapid growth, driven by platforms like Deliveroo and Uber Eats. These platforms offer workers, many of whom are migrants, flexible employment opportunities. However, the nature of this flexibility is often precarious.

As found in our research on the Scottish food delivery sector, many workers, including undocumented migrants, rely heavily on this work to meet basic needs. In Scotland, 48% of respondents in a survey of platform workers indicated that food delivery was their primary source of income, with many working over 40 hours per week.

Despite the long hours, many workers report dissatisfaction with pay, highlighting a key issue: economic sustainability is far from achieved. A notable 62% of gig workers expressed dissatisfaction with their pay rates, and 77% felt the effort they put into their work was not adequately rewarded.

Furthermore, many do not receive payment for waiting times, a common complaint that exacerbates the financial insecurity of this group. For undocumented migrants, the situation is even more precarious. They often rent accounts from other couriers, paying a weekly fee of up to £120, significantly reducing their take-home earnings. Without access to fundamental employment rights such as sick pay, these workers remain in a vulnerable and economically unsustainable position.

Social Sustainability: Health, Safety, and Worker Dignity

Beyond pay, the food delivery sector presents considerable challenges in terms of worker safety and dignity. Research indicates that 81% of couriers feel unsafe at work, with many reporting harassment and abuse. Female workers, in particular, face disturbing levels of sexual harassment, while racial and ethnic abuse is also widespread. These findings show a failure to create socially sustainable work environments that ensure worker dignity and safety.

The physical dangers of the job further compound these issues. Couriers often work under time pressures that push them to engage in unsafe practices, such as running red lights or riding on pavements, endangering themselves and others. The lack of safety measures for food couriers reflects poorly on the platforms that manage these workers and highlights the broader systemic issue of informal and poorly regulated work environments.

Worker Voice and Collective Power

A crucial aspect of sustainability is the ability of

workers to exercise their voice and influence their working conditions. However, food couriers face significant barriers to organising this due to their classification as self-employed, which excludes them from traditional collective bargaining mechanisms. Additionally, the capacity of gig workers to build power varies significantly, with different groups of couriers developing varying strategies to build collective and individual power depending on factors like nationality, dependence on gig work, and legal status.

Native British couriers and documented migrants who rely on food delivery as their primary source of income are more likely to engage in collective efforts such as joining courier networks and unions. These networks serve as informal unions, organising protests and strikes to push for better pay and working conditions. However, undocumented migrants, who are heavily dependent on the sector and face significant legal barriers, tend to be excluded from such collective efforts due to fears of jeopardising their income or being exposed to immigration enforcement.

Despite these challenges, couriers use technology, such as social media and messaging apps, to build solidarity and share information. This enables them to coordinate strikes and other forms of protest, albeit with varying levels of success depending on the workers' legal and social status.

Towards Sustainable Work Practices

Significant policy changes are needed to achieve sustainable work practices in the food delivery sector. Firstly, platform couriers should be recognised as workers rather than independent contractors. This would grant them access to basic employment rights such as holiday pay, sick leave, and the right to unionise. Such changes would address the economic and social vulnerabilities currently faced by many couriers, particularly those in precarious situations due to their immigration status.

Secondly, pay structures need to be reformed to ensure that couriers are fairly compensated for the time and effort they invest. Research has shown that many couriers work long hours for diminishing returns, and practices such as multi-apping (working for multiple platforms simultaneously) further exacerbate work intensity, without necessarily improving economic outcomes. Platforms must also take greater responsibility for the health and safety of their workers, ensuring that couriers are not exposed to unnecessary risks while on the job.

Conclusion

Sustainability in the food delivery sector involves addressing couriers' economic, social, and safety needs, particularly those in vulnerable positions such as undocumented migrants. The UK can move towards a more equitable and sustainable gig economy by recognising gig workers' rights, ensuring fair compensation, and fostering environments where workers can safely voice their concerns. Without these changes, the sector risks perpetuating a cycle of precariousness that undermines both worker well-being and broader societal goals of fair and sustainable work practices.

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Dr. Nadia Kougiannou is Associate Professor of Work and Employment; Co-Director of Research Outputs, Nottingham Business School.

Universities working in partnership for a sustainable regional economy

Will Rossiter

Last spring saw voters across Derbyshire and Nottinghamshire, including the cities of Derby and Nottingham, choose their first directly elected mayor. Labour's Clare Ward now leads the East Midlands Combined County Authority (EMCCA) responsible for an area with a population of around 2.2 million people. The prime responsibility of the mayor is to implement the East Midlands Devolution Deal - an agreement negotiated between the leaders of the four principal local authorities in this sub-region and the Government. The deal will see the mayor take on new responsibilities devolved by government and receive (some) additional funding with which to discharge these new responsibilities.

At the heart of the mayor's new role is a responsibility to promote the sustainable economic development of the East Midlands - a mission that aligns closely to NBS' long-term commitment to sustainability in all its forms.

The East Midlands has come relatively late to this party. The current model of devolution to Metro Mayors and combined authorities originated with the Greater Manchester Agreement of 2014 which led to the election of Andy Burnham as Mayor of Greater Manchester in 2017. Other prominent Metro Mayors subsequently elected to lead combined authorities included Andy Street in the West Midlands, Steve Rotherham in Liverpool, Tracy Brabin in West Yorkshire and Ben Houchin on Teesside. There are currently 22 devo deals in place or in development in England.

Compared to more established combined authorities such as those in Manchester and the West Midlands, the scope and funding associated with our devolution deal is relatively modest. Expectations for the new Authority must therefore be realistic.
The initial focus of the East Midlands County Combined Authority's activity will be:

- Employment and skills
- Transport
- Housing and land use
- Net Zero (including retrofit of existing buildings)
- Business support and innovation.

The new Combined Authority will be staffed by around 50 people and initially take charge of a £38 million a year investment fund. This will rise with the devolution of an Adult Education Budget of around £53 million in 2025.

Of course, the deal promises much larger levels of new public investment into the region equivalent to some £4.4 billion in total - but this is over a 30-year period.

This includes an additional £1.5 billion of transport funding which will flow into the region as a result of Rishi Sunak's cancellation of the northern leg of High Speed 2.

In the current public funding environment, any additional funding must be welcomed. But these levels of new public funding are insufficient to transform a regional economy worth around £50 billion in gross value added per year.

As a new combined authority and one of the first 'county' combined authorities to be established in England, EMCCA and the mayor are going to face some very particular challenges.

In part, these challenges stem from the economic and political complexity of the East Midlands.
A defining characteristic of our region is its relatively dispersed pattern of spatial development. To this polycentric urban structure, we must add a political landscape of greater complexity than those to be found in places like Birmingham or Manchester.
The East Midlands is characterised by a patchwork of

unitary and two-tier (county and district) local authorities and has often been said to lack a clear sense of regional identity. This could lead to low levels of 'buy-in' and engagement with the combined authority among local community organisations and residents. In this context it is particularly important for the strategies and investment plans of the mayor to be based on sound evidence.

Since 2010, the capacity of many public authorities to produce this kind of evidence-based policy making has been eroded by the many years of public sector austerity.

At NBS we believe that universities have a key role to play in rebuilding the capacity of public bodies, such as our new combined authority, to produce and use robust research and evaluation evidence to inform their activities.

It is for this reason that we have built our capacity to undertake research and analysis on local and regional economic development and have worked extensively in partnership with other universities to respond to the research and evidence requirements of a wide range of public bodies engaged in this domain of activity.

In partnership with City REDI at the University of Birmingham, NBS helped to establish the Midlands Engine Observatory in 2018/19 and contributed to the first independent review of the Midlands economy. We have similarly provided evidence and analysis to inform the strategies and plans of local authorities and local enterprise partnerships within the East Midlands, but also much further afield in places such as Cardiff, Newcastle and Swindon.

Locally we work with the University of Nottingham through the Universities for Nottingham initiative to make university expertise in a wide range of subject areas accessible to local organisations. The creation of EMCCA is likely to stimulate further development of knowledge exchange collaborations of this kind.

We are also working closely with the universities of Nottingham and Derby to develop a new integrated regional approach to knowledge exchange that will give the mayor and Combined Authority ready access to insights derived from academic research and policy expertise. Insights that it is hoped will help the new Authority to develop impactful plans and strategies in an evidence-informed way.

If the East Midlands is to benefit from this latest phase of devolution, we must have a regional combined authority, headed by an elected mayor, who can be a powerful advocate for our region - able to secure both the powers and resources necessary to make a difference to the people of this region. Universities have a key part to play in ensuring that the mayor has the evidence and capacity necessary to make this happen.

Professor Will Rossiter manages the Economic Strategy Research Bureau at Nottingham Business School.

AI-Powered Beef Farming: How Digital Twins Can Transform the UK's Struggling Beef Industry

Fatima Gillani and Xiao Ma

The UK's beef industry faces mounting challenges that threaten both its economic viability and environmental impact.

While beef farming is a cornerstone of British agriculture, it is also a major contributor to Greenhouse Gas (GHG) emissions. Globally, beef farming produces four billion metric tons of emissions annually, accounting for 61.8% of all livestock emissions.

In the UK, the financial returns of grazing livestock farms are alarmingly low, with an average income of just £23,000 per year—significantly lower than the £230,000 seen in dairy or £106,000 in specialist poultry farming.

A major challenge for UK beef farmers is the lack of consistent beef quality across the national herd. Globally, meat quality-driven standards, as such in Japan and Australia, have created a surge in profitability for premium beef.

This is not so in the UK (and Europe) due to yield-driven beef grading, low margins of the industry and the value being extracted later in the food supply chain (i.e. supermarkets). Thus, farms sink into "zombie" status, relying on subsidies to survive, while trapping authorities into financing the industry.

Animal welfare is also an increasing social concern. The Scottish beef industry recently reported calf mortality rates averaging 6% for animals up to the age of 36 months, with the majority in the first few months of life. If replicated this would mean 70,000 dead animals per annum across the UK. They also reported 'considerable variation between farms' and highlighted the opportunity for improving practice throughout the industry to regain confidence from consumers and other stakeholders.

This productivity gap is a consequence of missing a key enabler - precision farming.

Pasture-based beef farming is one of the most inefficient agricultural systems, primarily because it struggles to harness the benefits of precision farming.

Reports by leading consulting firms, such as McKinsey, have underscored the urgency of addressing the industry's inefficiencies and pointed to advanced technologies as key to modernising the beef farming value chain. Unlike dairy and poultry farms, which use advanced data-driven technologies to optimise productivity, beef farmers often lack real-time insights into critical parameters such as animal health, feed efficiency, and GHG emissions.

BeefTwin: A Revolutionary AI-Powered Solution

Currently, efforts to improve efficiency and sustainability in one part of the beef farming value chain often come at the expense of another. For example, investing in modified pastures to reduce emissions has led to lower yields and decreased productivity for farmers.

The future of UK beef farming requires a fundamental transformation across Feed (conversion), Farming practice, and Food (beef) quality.

Through our BeefTwin project, we aim to advance beyond traditional herd-level feed conversion metrics to measure the exact growth and methane emissions from cattle tailored to the individuality of their diets. This initiative aims to develop AI-powered Digital Twins for beef cattle, transforming how we farm beef in the UK. By using real-time data, simulation, and machine learning, BeefTwin will create virtual representations of individual animals and farming systems, providing unprecedented insights into feed efficiency, methane emissions, and overall animal welfare.

By leveraging AI and Digital Twin technology, the project will enable farmers to:

Reduce Greenhouse Gas Emissions: Real-time monitoring and data-driven insights will allow farmers to lower methane emissions, contributing to the UK's climate goals.

Improve Feed Conversion Efficiency: Understanding the biological and environmental factors that influence feed conversion will lead to better resource use and increased productivity.

Enhance Animal Welfare: By tracking health and growth metrics at the individual level, BeefTwin will help reduce calf mortality rates and improve the overall well-being of cattle.

Boost Economic Viability: With optimized operations, beef farmers can achieve higher profitability, reducing their dependence on subsidies and ensuring long-term sustainability.

A Cross-Disciplinary Collaboration for Impact

To address the multifaceted challenges of inefficiency and sustainability in the beef farming the BeefTwin project brings together experts from multiple disciplines and universities to tackle the complex challenges facing the UK beef industry:

1 **Biosciences:** focusing on microbial analysis of cattle waste to understand feed conversion into meat and methane emissions. This research will provide insights into optimizing feed efficiency while minimizing environmental impact.

2 **Environmental Science:** tracking methane emissions using drones, sensors, and methane analyzers. By pinpointing emission sources, the team can develop targeted mitigation strategies.

3 **Computer Science and AI:** developing cutting-edge sensor and computer vision technologies to measure cattle weight, behaviour, and methane emissions. These tools will enable precision farming practices that are critical for reducing GHG emissions and improving animal welfare.

4 **Management Sciences:** developing a data-driven farming model to simulate and optimize operations, addressing socioeconomic issues facing farmers like grazing patterns to enhance resource efficiency, productivity, and profitability across the supply chain.

Collaboration for a Sustainable Future

The success of BeefTwin depends on active collaboration with farmers, policymakers, and industry stakeholders. Over the next two years, the project will work with farms across the UK to implement and refine these technologies. The goal is not only to make UK beef farming more sustainable but also to ensure that it remains competitive on the global stage.

"The beef industry in the UK, and Europe, faces competition from countries like South America and Southeast Asia, where smart farming systems have already driven significant profitability," warns Professor Ma.

The beef industry in the UK, and Europe, faces competition from countries like South America and Southeast Asia, where smart farming systems have already driven significant profitability. If we don't act quickly, we risk outsourcing our beef industry to these regions. BeefTwin offers a pathway to secure the future of UK beef farming while meeting environmental and social obligations.

Join the BeefTwin Revolution

BeefTwin invites UK farmers and industry partners to join this transformative initiative. If you are interested in participating and helping to shape a sustainable future for beef farming, contact CBIT at **cbit@ntu.ac.uk.**

Professor Xiao Ma, Director CBIT, PI BeefTwin Project, Nottingham Business School.

Dr Fatima Gillani is a Senior Research Fellow at the Centre for Business and Industry Transformation and Co-Lead for the BeefTwin Project at Nottingham Business School.

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