UNIVERSITY OF LIVERPOOL

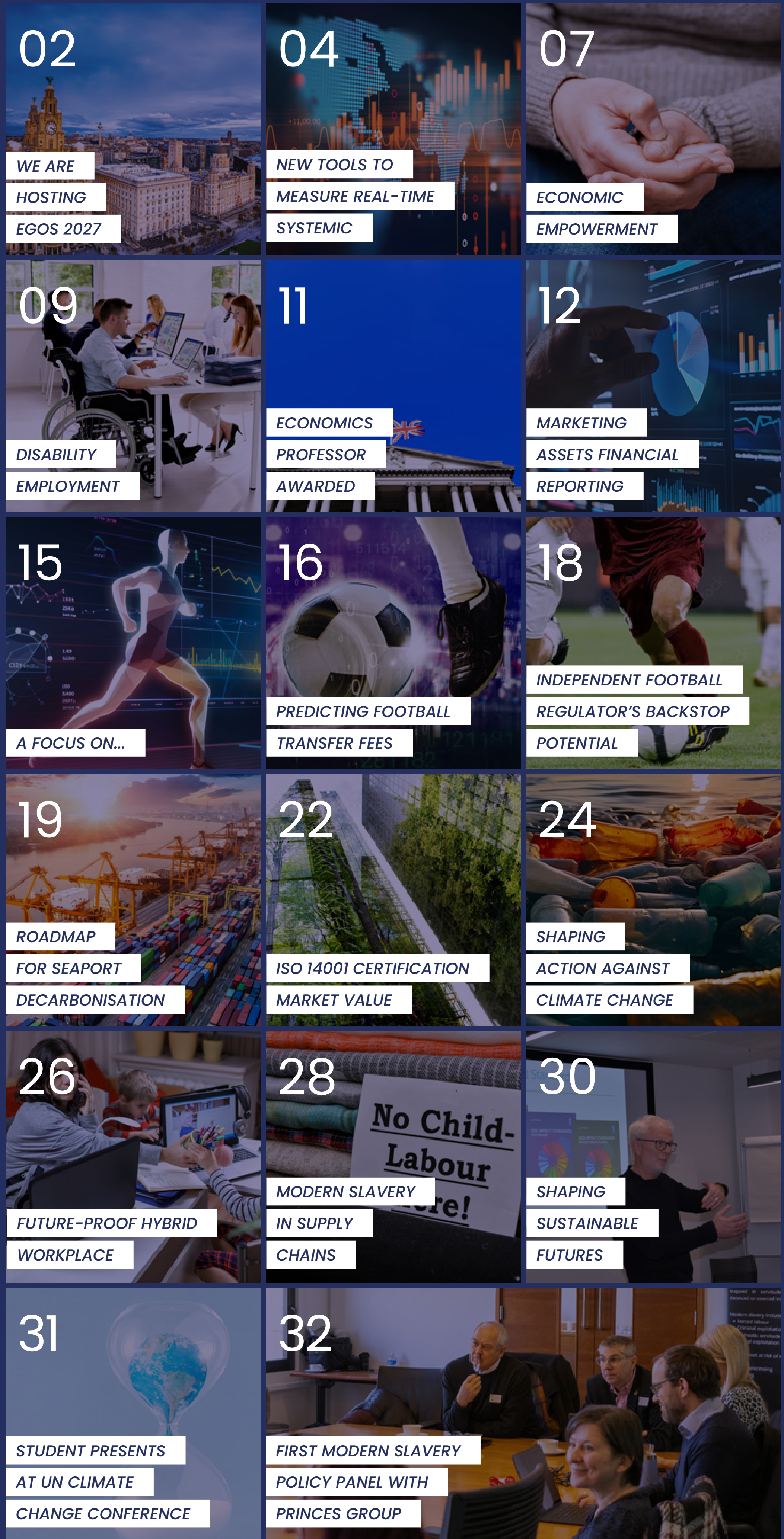
Management School

Learning to make a difference from an enterprising and vibrant world city of culture.

Issue 04 | Summer 2024

Research.

Contents



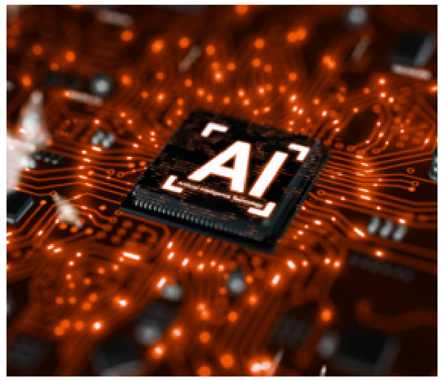
Professor Julia Balogun
ULMS Dean and Brett Chair in Management

Welcome to the fourth edition of Research, showcasing original and innovative research from across the University of Liverpool Management School.

In this issue we bring you the latest research updates from our School, and present ground-breaking studies from colleagues in our six subject groups.

You will find insightful investigations on uncertainty in financial markets, domestic violence and female labour supply, the value of marketing assets accountability, maritime decarbonisation, environmental management systems and climate change imaginaries.

We also take a closer look at our Centre for Sports Business, and bring forward examples of how our researchers are impacting businesses and policymaking. We hope you find it interesting.



During the past 12 months, our Management School has been working to strengthen its position as a world-class international institution.

Early this year, we were selected as hosts for the 43rd European Group for Organisational Studies (EGOS) Colloquium in 2027.

We look forward to bringing this top-class academic event to Liverpool and are working hard to ensure everyone has an unforgettable experience.

The success in bringing EGOS to our city can only be attributed to the collective effort of all staff involved and is preceded by over 20 years of steadfast commitment to advancing excellence in management and organisational research.

We are also getting ahead of opportunities presented by disruptive technologies, which are not only reshaping the way organisations operate, but also how we conduct research.

Our academics are working on exciting investigations using artificial intelligence (AI) and machine learning techniques to resolve issues in pressing areas, such as sustainability, and improve the predictive power and accuracy of new models.

We are also incorporating this knowledge and experience into our academic portfolio, with AI focused programmes and modules, to address new business demands by developing professionals with the latest technological knowledge and skills.

I AM DELIGHTED TO LEAD SUCH A PROGRESSIVE AND FORWARD-LOOKING SCHOOL AND I TRUST YOU WILL ENJOY READING THIS EDITION OF RESEARCH.

WE ARE HOSTING EGOS 2027

The Management School has been selected to host a highly prestigious international conference in 2027.

Delegates will descend on Liverpool in their thousands for the 43rd European Group for Organisational Studies (EGOS) conference in 2027, coinciding with our School's 25th birthday.

The Management School was chosen following a competitive bid process that examined the extensive research expertise of the local organising committee, campus facilities, the ability to accommodate up to 3,000 visiting international delegates and the cultural offer of the city of Liverpool.

This is the first time since 1999 that the conference has been hosted at an English University, with previous host cities including Milan and Athens.

With more than 3,000 members from 62 different countries, EGOS is a scholarly association which aims to further the advancement of knowledge about organisations, organising and the contexts in which organisations operate.

Our Management School has strong ties with EGOS, with dedicated chairs in organisational studies and organisational theory.

THE 2027 EGOS CONFERENCE, TAKING PLACE IN JULY 2027, WILL HOST DELEGATES NOT ONLY AT THE UNIVERSITY OF LIVERPOOL CAMPUS, BUT ALSO ACROSS THE CITY IN ICONIC LIVERPOOL VENUES, SUCH AS ST GEORGE'S HALL.

We will be supported in delivering the conference by the award-winning Abbey Conference and Events (part of the Abbey Group), which are Ireland and the UK's largest inbound tour operator, with offices in Dublin and Liverpool.

Professor Julia Balogun, Dean of the Management School said: "We're delighted that we've been selected to host EGOS 2027."

"This will be a pivotal year for the Management School as we celebrate our 25th anniversary.

"I'm really pleased that the School's excellence in the area of organisational studies has been recognised and we can't wait to welcome delegates to our campus and our fantastic city."

THIS IS THE FIRST TIME SINCE 1999 THAT THE CONFERENCE HAS BEEN HOSTED AT AN ENGLISH UNIVERSITY, WITH PREVIOUS HOST CITIES INCLUDING MILAN AND ATHENS.

NEW TOOLS TO MEASURE REAL-TIME SYSTEMIC RISK AND FINANCIAL UNCERTAINTY

Dr Michael Ellington
Senior Lecturer in Finance

Dr Mattia Bevilacqua
Lecturer in Finance

Based on a new model developed by Dr Michael Ellington that views links between businesses and sectors as a network, Dr Mattia Bevilacqua shows how we can detect industries with the greatest impact on the real economy.

Michael and Mattia propose and develop monitoring tools to identify sources of risk and financial uncertainty in real-time, with clear benefits for macroprudential supervisors and investors.

Michael proposes a framework that measures the strength, direction and persistence of links among businesses, and shows how connections among firms intensify during periods of high uncertainty and economic turmoil.

Using this approach, Mattia tracks connections using novel forward-looking data that provides a classification of "uncertainty hubs", which are industries that amplify uncertainty to other sectors, impacting the overall economic cycle.

As well as showing how links among firms contribute to systemic risk, the models offer valuable insights for the design of policies, to prevent risk spillovers from the financial market into the real economy.

The impact of firm connectedness in financial networks

Prior to 2008, US banks embraced an aggressive form of predatory lending, targeting low-income homebuyers to sign up for mortgages with a high risk of never getting paid back.

This continuous buildup of toxic assets, eventually caused the bursting of the US housing bubble, creating a perfect storm for the deepest recession within and beyond US borders, since 1929.

The main lesson from the 2008 Global Financial Crisis is that no nation, company or consumer is immune to the effects of shocks from neighbouring countries and other economic agents in their own economies.

While the effects of transitory shocks are normally short lived, permanent shocks can impact a firm's immediate and future productivity plus cash flows[1].

The goal of macroprudential polices is to increase the financial system's resilience to shocks, by identifying and addressing systemic risks that cause severe loses across the financial system.

Firms deal with businesses to produce goods and services, banks lend to each other and nations trade to facilitate growth, creating links and wider networks.

FINANCIAL NETWORKS ARE DYNAMIC AND VULNERABLE TO SHOCKS, AS THESE CAN GENERATE NEW LINKS AND STRENGTHEN EXISTING ONES, WITH VARYING DEGREES OF PERSISTENCE.

The effects of shocks can move through the economy in uncertain ways, which highlights the importance of understanding how networks facilitate this process in the short and long-term.

Identifying risk by monitoring persistence in uncertainty networks

In their joint investigation, Michael and colleague Professor Jozef Barunik from Charles University, develop a novel approach to track how networks change over time in response to temporary and persistent shocks.

An analysis[2] of 2005-2018 stock return volatility data from S&P500 American firms across 11 sectors[3], reveals risk from different industries spills over to one another and long-term connections intensify in conjunction with market downturns.

In other words, the model suggests systemic risk stems from persistent network structures[4].

Using daily data, the framework visually illustrates the direction and strength of a sector's network connections caused by transitory and persistent shocks on a particular day.

By highlighting firms that send more shocks than they receive, it offers a quantitative measure of how individual institutions influence systemic risk, which helps identify systemically important financial institutions (SIFIs)[5].

A new measure to identify uncertainty hubs and predict business cycles

One of the framework's main advantages is its applicability to a wide range of financial phenomena[6].

Mattia, Jozef and Professor Robert Faff from University of Queensland, follow a similar approach to develop a new measure of network uncertainty from US industries that helps predict future business cycles up to one year ahead.

The new measure indicates the existence of "uncertainty hubs", which are industries with the potential to spread uncertainty to other sectors and the real economy.

Instead of using stock prices, they use changes in option prices to study networks that form on shocks to investors' expectations, or "fears"[7].

Using 2000-2020 option price data for a large sample of US firms, they developed a predictive network uncertainty index which considers investors' future expectations on the next month's industry uncertainty.

The analysis reveals communications, IT, finance, and real estate sectors as those with the highest contributions to overall network uncertainty and, consequently, the ones with the strongest effect on the business cycle.

THIS MEANS PRICES, PRODUCTION, EMPLOYMENT AND GROWTH WERE NOT ONLY IMPACTED IN THESE SECTORS, BUT THERE WERE ALSO UNCERTAINTY SPILLOVERS TO OTHER INDUSTRIES, ULTIMATELY AFFECTING THE BROADER ECONOMY.

[1] Temporary shocks can be caused by, for example temporary changes in demand or supply chain disruptions, but do not have a long-term impact in the company's productivity and cash flows. In contrast, permanent shocks caused by disruptive technologies, trade barriers, etc. cause longstanding effects on the business.

[2] Network connectedness is measured using frequency domain techniques, specifically time-varying spectral decompositions.

[3] 11 main sectors according to the Global Industry Classification standard: Consumer Discretionary, Consumer Staples, Health Care, Industrials, Information Technology, Materials, Real State, Financials, Energy, Communication Services and Utilities.

[4] The model shows spikes in persistent network connectedness when long-lasting financial and economic events occur.

[5] See also previous work by Mattia on the forward-looking measures of the network connectedness of fears in the financial system, available at **doi.org/10.1162/rest_a_01003**.

[6] Current projects are implementing a similar approach in the study of price network risk in currency markets, climate change impact on financial markets and sectoral connections in Japanese and Chinese financial markets.

[7] Options contracts give investors the right to buy or sell a financial asset at a predetermined price before a specified day, therefore price fluctuations provide a reliable picture of the future risk and investors' expectations about the performance of an industry.

Continued over...

Benefits for central banks and investors

Both methods provide precise point-in-time estimates useful to analyse network connectedness daily, monthly or in relation to a business cycle period of interest.

On a macroeconomic level, these monitoring tools offer valuable insights to refine policies aimed at mitigating adverse firm behaviour.

For example, macroprudential policy makers and analysts may use it to provide a ranking on how risky financial firms are at a specific time, which helps assess whether a sector of SIFI influence is temporary or long lasting.

This could act as a signal to monitor balance sheets or lending positions and allow policy responses at bank level (eg increasing capital requirements for firms/sectors that contribute significantly to systemic risks).

Changes in networks derived from uncertainty hubs can serve as leading indicators of the business cycle, which means policy interventions can be targeted at mitigating the impact of their fluctuations.

Specifically, reducing shocks in sectors like financials, communications and IT could prevent excessive uncertainty propagation, which can potentially lead to business cycle contractions.

Central banks with an inflation targeting mandate may use it to understand how long an interest rate change is needed to counter inflation without triggering an economic slowdown.

On a microeconomic level, financial institutions could use the models to track the riskiness of other banks or firms applying for loans, and hence influence their lending decisions.

Scan the QR code to read Michael's paper or visit: **doi.org/10.1016/j.ejor.2023.11.023**

Scan the QR code to read Mattia's paper or visit: **doi.org/10.1016/j.jedc.2023.104793**

ECONOMICS

CAN ECONOMIC EMPOWERMENT REDUCE THE RISK OF WOMEN SUFFERING DOMESTIC ABUSE?

Dr Noemi Mantovan
Senior Lecturer in Economics

With a staggering number of yearly victims of domestic abuse in the UK, Dr Noemi Mantovan explores how partner violence impacts the female labour supply and women's life choices.

Noemi's investigation indicates that having an abusive partner incentivises women to delay fertility or not have children at all and divorce more often.

The study also confirms a significantly higher risk of abuse for women who are not working, compared to those who participate in the labour market.

While higher wages also reduce women's overall exposure to abuse, the analysis reveals income support and subsidised childcare largely fail to do so by encouraging early fertility.

The study offers valuable insight into the multidimensional effects of domestic violence on female lifecycle decisions and the effectiveness of policies aimed at countering it.

[1] Source: **National Centre for Domestic Violence.** Based on ONS data 2022, Violence Against Women & Girls: Research Update Nov 2022, Femicide Census, Domestic Abuse Act 2021: Policy Background, National Centre for Domestic Violence 2022 and HMIC 2019 and 2015.

[2] Dan and Robert are Professors of Economics at Royal Holloway University of London.

[3] The ALSPAC offers annual survey data on a set of children and their parents from birth until they turn seven.

[4] The study also includes British Crime Survey data to reflect the abuse experiences by childless women.

This investigation is part of a wider research project, where Noemi seeks to better understand the factors influencing women's lifecycle decisions, with new studies on the effects of poor mental health and menopause.

Domestic violence towards women in intimate relationships

The excitement of meeting a new love interest usually comes with hopes of a happy, long-lasting and well-functioning relationship.

However, in far too many cases, these dreams are shattered when the new partner gradually shows physically or emotionally cruel behaviours.

This harsh reality is particularly common for women, as male violence against women is present in every part of the world, including the UK.

UK estimates show one in four women have been abused by partners in their lifetime, and there are around 1.7m female victims of domestic violence per year.

With just under 24% of cases being reported to the police[1], this is a largely hidden offence, and also the crime category with the highest level of repeat victimisation.

Understanding the impact of domestic violence on women's decisions

Intimate partner violence has far-reaching consequences for women's mental and physical wellbeing, as well as for other important life decisions.

However, identifying the risk involved in a relationship with a person with a violent nature is not straightforward, because abusive dynamics are normally disclosed gradually.

THIS RAISES IMPORTANT QUESTIONS ON HOW WOMEN MAKE DECISIONS AS THEY ENTER THE CYCLE OF ABUSE, INCLUDING HAVING CHILDREN OR SEPARATING, AS WELL AS WHETHER CERTAIN CAREER CHOICES INCREASE OR REDUCE THE RISK FOR POTENTIAL VICTIMS.

To shed light on these questions, Noemi and Professors Dan Anderberg and Robert M Sauer[2], present a dynamic lifecycle model of women's choices on childbearing, employment and divorce in an environment where they are at risk of abuse from partners.

Continued over...

Using Avon Longitudinal Study of Parents and Children (ALSPAC)[3] data, the research team focused on the answers of nearly 4,000 first-time mothers to questions on intimate partner abuse, labour supply and fertility choices[4].

Working women at lower risk of being abused

The model confirms a U-shaped relationship between working and exposure to abuse, meaning women have less risk of suffering domestic violence if they have a job.

THE RESULTS REVEAL WORKING PART-TIME REDUCES THE RATE OF ABUSE BY ALMOST 14% COMPARED TO NOT WORKING, AND THOSE WITH HIGHER EARNINGS HAVE A 4.5% LESS RISK OF BECOMING VICTIMS.

The model also shows that as violent men are high-frequency repeat abusers, women become aware of their nature quite fast, creating strong incentives to delay having children by a few years.

Divorce becomes five times more likely once the episodes of abuse start, and the chances of women conceiving a further child reduce substantially.

Income support and subsidised childcare fail to counter domestic violence

In addition to demonstrating the direct abuse-reducing effect of working and higher earnings, the research team also explored the potential effects of policies aimed at supporting female economic empowerment.

To do so, they estimated how women's decisions would change in response to shifts in the economic environment, including:

- Raising female wages to close the gender pay gap
- Higher child-related income for single mothers
- Subsidised childcare support for working mothers.

In the first experiment, female earnings were raised to equal average wages for both genders (+15%), which resulted in an overall delay in fertility, especially for young women.

While better wages decreased the incidences of abuse by a timid 2%, the counterfactual simulations highlighted a clear effect on key behavioural responses, such as divorcing more often, delaying fertility and working more frequently.

In other words, better labour market opportunities mean women are less likely to become trapped in abusive relationships, by not having children early on in relationships and being financially better placed to leave.

The second experiment tested the potential of more generous income support for single mothers to reduce domestic abuse.

The results reveal a major encouragement of fertility by every measure: lower age at first birth, less childless women and a higher average number of children.

Incentivised childbearing, plus access to non-labour income, mean women would be perversely shifted away from employment, reducing their opportunities to enter the workforce.

More worryingly, income support not only fails to reduce exposure to domestic violence but also leads to higher rates of abuse, particularly towards mothers.

The final policy experiment explores the impact of cutting down the cost of childcare for working mothers by 20%.

While this measure encourages labour force participation, it again encourages fertility by reducing the overall expected cost associated with having children.

As the estimations show a negligible effect on abuse, subsidised childcare could be seen as a reasonable policy to encourage fertility and labour supply, without making women more exposed to violence.

HOWEVER, A CLOSER LOOK INTO THE NUMBERS REVEALS AN IMPORTANT CAVEAT: THE INCIDENCE OF ABUSE AMONG MOTHERS – AND HENCE THE EXPOSURE TO ABUSE FOR CHILDREN – INCREASES BY ABOUT 3%.

Both findings refute the popular assumption that higher income support and subsidised childcare enable women to leave abusive relationships.

This confirms any efforts to develop effective policies against domestic violence need to consider the multiple short and long-term effects of women's life decisions.

Scan the QR code to read Noemi's paper or visit: **doi.org/10.1093/ej/uead057**

EXPERT STRESSES LOW IMPACT OF GOVERNMENT'S EFFORTS IN TACKLING DISABILITY EMPLOYMENT GAP AT HOUSE OF COMMONS

Professor Ian Burn
Chair in Applied Microeconomics

Speaking at the House of Commons, Professor Ian Burn stressed the low impact of the Government's latest efforts in narrowing the current disability employment gap (DEG).

During his intervention at the Work and Pension Committee's inquiry into disability employment held on 1 May, Ian presented novel evidence that corroborates the existence of a sizable and persistent DEG in the UK.

He explained hiring decisions are driven by taste-based discrimination arising from prejudice rather than statistical discrimination based on concerns over employee productivity, as even upskilling candidates -a common policy proposal for reducing the gap- does not have a significant impact on callbacks from employers.

Ian also refuted the idea that organisations advertising themselves as supporting equal opportunities follow through with more inclusive hiring processes, as these display similar discriminatory hiring behaviours than employers which don't do so.

This includes companies which reference the Disability Confidence employer scheme and those offering remote working opportunities, both emphasised by the Government as effective strategies to reduce the DEG.

Ian was one of the experts invited to answer MP questions during the first session of the inquiry, aimed at finding ways to support disabled people to start and stay in work and assess the effectiveness of the Government's efforts to tackle disability-related hiring discrimination.

Fewer callbacks for wheelchair users

During the session, Ian presented evidence from a field experiment co-produced by Dr Armenak Antinyan and Professor Melanie Jones from Cardiff University, designed to better understand hiring discrimination against disabled job seekers in the UK.

The study, specifically focused on physical mobility, compared the number of callbacks received from 4000 fictitious job applications, half of which stated the candidate was a wheelchair user.

Over the course of a year, the research team applied to all real-world vacancies for accountants and financial accounts assistants posted on a specific job board, as physical impairment for these roles was assessed to have no impact on worker productivity.

They found that "on average, across both occupations, disabled people received about 16% fewer callbacks", but as Ian noted, "if we break it down into the two occupations, accountants didn't have any significant difference in hiring discrimination".

However, for financial accounts assistants/bookkeepers, "the gap was unfortunately 20%", which demonstrates the difference in callbacks was driven by these less skilled roles.

This is consistent with previous US, EU and UK estimates, which alert of "about 25% to up to 50% fewer callbacks" for disabled applicants, meaning "you have to submit almost twice as many jobs to receive the same number of callbacks if you're disabled".

Taste-based discrimination as a driver for hiring decisions

Commenting on the potential sources of discrimination, Ian explained that "if you look at financial accounts assistant and bookkeeping occupations, we see that 20% is concentrated on job ads focused on teamwork".

Continued over...

This indicates hiring decisions are "very much being driven by what we call taste-based discrimination within the UK, which is sort of a dislike for working with disabled applicants, not because of some stereotype about productivity".

The experiment also revealed some evidence of taste-based discrimination in roles which involved dealing with customers, as "even within the average zero gap for accountants, there was discrimination if the job ad mentioned clients".

While this was only a requirement for a small number of certified accountant job ads, the data suggests "working externally with clients was a big driver of discrimination within this occupation".

Upskilling and positive recommendations have little impact on callbacks

In response to a question by David Linden MP, on the potential of upskilling job seekers to alleviate the gap, Ian confirmed that even when a disabled person had more qualifications, they would still be more likely to be discounted than a non-disabled candidate.

When the research team upskilled the candidates, they "saw no reduction in the discrimination".

The team also tested other productivity signals, such as positive letters of recommendation from a previous employer, as these have proven to be effective in tackling other forms of discrimination (eg racial), but they "didn't see any evidence of that for disability".

Discriminatory hiring practices also among Disability Confident employers

As the inquiry aims to assess the Department of Work and Pension's national programme for supporting disabled people in work following concerns over its effectiveness, Ian was also asked to comment on the specific hiring behaviour of Disability Confident employers.

Ian stressed organisations which "claim to be part of the Disability Confident employer scheme" or included "equal opportunity indicators on the job ads", rejected applications "at the same rate as employers who didn't".

According to Ian, this is "very strong evidence that this is simply a cheap talk on the part of employers" and "a box ticking exercise that looks good for PR purposes, but they don't change the underlying behaviour".

Higher penalties as deterrent for discrimination

While this suggests being a Disability Confident employer can be an uninformative signal of employer behaviour, he also acknowledged the challenges of tackling taste-based biases, because employers assume "they gain some sort of disutility from working with a disabled person".

Referring to previous evidence from anti-ageism measures in the US, Ian argued "you have to change the cost-benefit analysis that they're doing", but "if you have very weak penalties for discrimination, you're not going to shift the behaviour".

While taste-based discrimination "is very hard to prove", Ian stressed the deterrent potential of imposing "very high penalties", as this would increase the financial risk of getting caught for employers.

Further elaborating on this, Ian said with these types of practices "you have to almost over exaggerate the penalties to really shift the behaviour", by changing "the expected value of discriminating", so "they're very careful not to discriminate because of the costs".

From a policymaking perspective, Ian concluded by suggesting a more US style approach that "focuses on the penalty lever rather than the enforcement lever", to improve the effectiveness of the UK's Equality Act.

Scan the QR code to watch Ian's intervention in Parliament.

ECONOMICS

ECONOMICS PROFESSOR AWARDED BANK OF ENGLAND'S SENIOR GEORGE FELLOWSHIP

Professor Oliver De Groot
Head of Economics

Chair in Macroeconomics and Head of the School's Economics Group, Professor Oliver De Groot, has been awarded a Senior George Fellowship at the Bank of England (BoE) for the academic year 2024-25.

During the fellowship, Oliver will reside at the BoE working as part of a collaborative project with the bank's researchers to study the nexus between monetary policy gradualism and financial stability.

The prestigious George Fellowship is awarded to expert researchers with high-quality proposals which contribute to further the understanding of the working, interaction and function of financial business institutions in the UK and elsewhere, and the economic conditions affecting them.

Oliver's research proposal addresses current problems in economics and finance of particular interest for the BoE, especially in the current context of economic uncertainty caused by geopolitical factors and high inflations triggered by supply shocks.

This is part of a wider funding initiative which includes other sources of funding, such as the Houblon Norman Fund, aimed at supporting and furthering the BoE's research agenda.

Oliver is a macroeconomist specialising in monetary economics, macro-finance, asset pricing and computational methods, with publications in leading academic journals, such as Econometrica, The Economic Journal, Journal of Monetary Economics and Quantitative Economics.

Alongside his long-established relationship with the BoE, Oliver has held visiting and/or consulting positions at Bank of Finland, Narodowy Bank Polski, National Bank of Kazakhstan and the International Monetary Fund.

He has also collaborated with economists at the European Central Bank to develop a toolkit to assist central banks' monetary policy decisions with optimal projections.

UNCOVERING THE ECONOMIC BENEFITS OF MARKETING ASSETS FINANCIAL REPORTING

Dr Peter Guenther
Senior Lecturer in Marketing

Dr Miriam Guenther
Senior Lecturer in Marketing

Dr Peter Guenther and Dr Miriam Guenther's study reveals key economic benefits in externally reporting marketing assets (MA) valuations, including lower equity financing costs, more realistic stock prices and greater marketing management efficiency.

The investigation shows that although MA accountability is targeted externally, it critically shapes marketing management internally, enabling a greater focus on long-term outcomes and improving overall performance[1].

The results also indicate clear external stakeholder outcomes, including an up to 19% cost of equity reduction and an up to 23% increase in stock price informativeness.

However, the study also finds that it is not necessarily the big marketing spenders, but the medium and small spenders that benefit most, from externally reporting the value of their MA.

From a managerial perspective, the research sheds light on the economic benefits of MA accountability, offering a four-step action plan for marketing executives.

It also provides important insights to inform policymakers on whether to increase reporting requirements for intangible assets, and stresses MA accountability value to improve investment decisions.

The hidden value of intellectual marketing assets

Do you know the financial value of Gatorade or Netflix's customer base? If your answer is no, you are not alone.

While publicly listed firms are required to deliver updates on income and certain assets (eg equipment, property), they often provide little external information on the value of their MA.

MA are the result of investments in advertising, sales channels, production facilities, servicescapes, etc, that allow businesses to build valuable intangibles, including brands, customer and channel relationships, and marketing licenses.

MA accountability requires continuous valuation of future cash flows expected from these assets, as well as its reporting to external financial market audiences (eg shareholders, investors, market analysts, etc).

Despite MA increasing importance in contemporary business models, firms rarely report on their economic value voluntarily, due to the cost of monitoring, insufficient in-house expertise and a lack of clarity on the benefits of doing so.

As a result, marketing becomes an expense that reduces profit in financial statements, while its economic value remains undocumented, especially regarding its financial long-term impact.

In contrast, investors perceive financial information on MA as highly relevant to decision making, because these assets tend to be fundamental value drivers.

Understanding the effects of MA financial reporting

To better understand the effects of including MA in reporting, Peter, Miriam and Professors Bryan A. Lukas[2] and Christian Homburg[3], analysed a unique dataset that captures Australia's 2006 move to International Financial Reporting Standards (IFRS), as part of a global effort to harmonise accounting rules.

While the previous Australian Generally Accepted Accounting Principles (GAAP), allowed firms to comprehensively record MA on their balance sheets, this is largely restricted under IFRS[4].

This creates a natural experiment setting to compare the impact of MA accountability before and after regulatory change[5].

THE ANALYSIS UNCOVERED ECONOMICALLY SIGNIFICANT EFFECTS RELATED TO MA ACCOUNTABILITY, ESPECIALLY FOR LESS MARKETING-INTENSIVE FIRMS.

MA accountability reduces management myopia and improves governance

The results indicate MA accountability increases short and long-term marketing efficiency by 8% and 10% for marketing-intensive firms (MIFs) - large marketing spenders - respectively.

However, for non-marketing-intensive firms (NMIF) - small and medium spenders - MA reporting resulted in a 17% reduction in short-term efficiency, plus a 22% increase in long-term marketing efficiency.

This suggests that, particularly for small and medium spenders, financial reporting of MA compels management to realign their focus to long-term performance goals for two main reasons.

First, including MA valuations on balance sheets changes what managers are effectively being held accountable for.

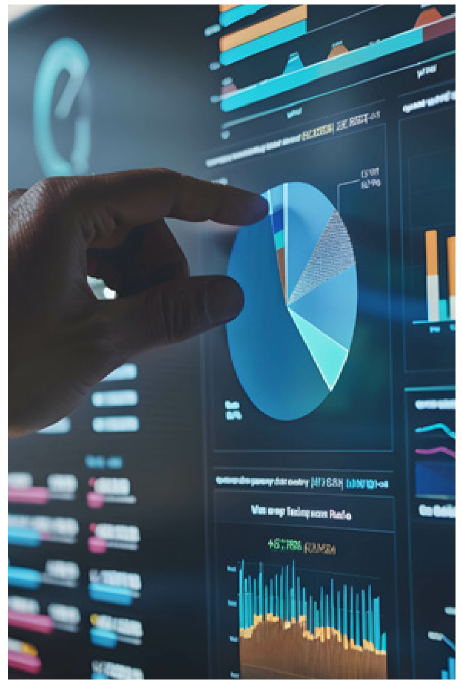
UNDER NO MA REPORTING, MARKETING MANAGERS TEND TO BE HELD RESPONSIBLE FOR THE SHORT-TERM PROFITABILITY OF THE RESOURCES INVESTED WITHIN THE CURRENT PERIOD.

However, MA reporting documents the lagged financial benefits of marketing spending, which favours an internal drive to assess and improve MA long-term impact on profitability.

Second, the knowledge derived from systematic and continuous measuring of marketing's future value contribution helps inform decision making on strategic opportunities to improve MA value.

However, this tends to be underdeveloped when general accounting rules do not require MA reporting, limiting managers' understanding of key cash flow drivers.

MA accountability can help close this information gap, resulting in a more value-oriented management of marketing performance, with less focus on short-term efficiency goals that can arise in the absence of information on delayed marketing returns.



Continued over...

[1] The results did not indicate a clear effect pattern for firms' cost of debt irrespective of their marketing intensity.

[2] Professor Bryan A. Lukas is Professor of Marketing at University of Manchester.

[3] Professor Christian Homburg is Professor of Marketing at University of Mannheim.

[4] The sample includes the largest 500 Australian publicly listed firms, from 2001 to 2010, with the accounting regime change coming into effect in 2006.

[5] The research team used a natural experiment in conjunction with a difference-indifferences (DID) approach - due to its ability to estimate causal relationships -, and propensity score matching (PSM) – to evaluate the effects of MA accountability based on a comparison with control firms that are similar to a focal firm.

[6] The analysis shows a cost of equity capital reduction of 4% for MIFs and 19% for NMIFs.

Easier access to funding and better stock valuations

The results also indicate systematic and transparent estimates on future financial returns from marketing investments help alleviate investor uncertainty and perceived risk.

According to the analysis, MA accountability brings down the cost of equity capital, but its effect is almost five times stronger for small and medium marketing spenders[6].

This means specifically for NMIFs, MA reporting reduces investors' fears by providing a benchmark to assess their own expectations about the company's future performance and hold management accountable for changes in MA values.

In addition, in the absence of MA accountability, investors may make inaccurate assumptions or be reluctant to fully incorporate MA into firms' stock prices.

The analysis confirms MA reporting plays a key role in addressing price misvaluation, with significant improvements in the predictive accuracy of 17% for MIFs and 23% for NMIFs.

Access to systematic MA valuations results in well-grounded management expectations, which anchors investor expectations, contributing to stock prices that are more indicative of actual future earnings.

This finding underscores the need for standardised and reliable measurement approaches, as MA valuations that exhibit lower levels of uncertainty are arguably more useful to investors and help reduce stock price distortions.

A four-step action plan for marketing executives

As well as providing valuable insights for standard setters and investors, Peter and Miriam's study includes a four-step action plan to help chief marketing officers (CMOs) successfully navigate the landscape of MA accountability.

First, they encourage managers to **drive improvements in external marketing accountability and claim credit**, by following a proactive approach that enhances investor confidence and elevates the role of marketing in the company.

- Extend the focus beyond direct customers and acknowledge the communication needs of financial market 'consumers' (ie investors).
- Adopt a recognised marketing asset valuation process that provides a good reference point for investors, such as the ISO 10668 standard on monetary brand valuation.
- As your input is crucial for external reporting, take credit for any firm-wide outcomes that extend past typical marketing results, such as improvements in equity financing costs and stock prices.

Second, they remind CMOs of the importance to **do it with maximum impact** and provide guidelines to ensure the benefits of MA accountability are maximised:

- Use valuation companies for more accurate MA value estimates.
- Base reporting on certain MA types, such as customer relationships or brands, to drive attention to long-term marketing efficiency.
- Report distribution agreements if your goal is to improve stock price informativeness.
- Include marketing licenses within your brand value reporting.

Third, they recommend CMOs **share their views with standard setters**, to ensure their valuable perspectives are heard in exchanges that influence external accountability rules:

- Engage with standard setters such as the IFRS' International Accounting Standards Board and the Financial Accounting Standards Board.
- Raise awareness about external reporting effects on internal decision making.

And finally, they urge marketing executives to take a proactive approach to stay ahead of evolving trends and **preempt change**:

- Your time to act is now.
- Prepare for new developments that increase investors' demand for enhanced marketing accountability (eg ISO 20671 brand valuation standard, IASB's "Intangible Assets" project, evolving regional benchmarks).
- Help build your firm's capabilities for MA financial reporting accordingly.

Scan the QR code to read Peter and Miriam's paper or visit: **doi.org/10.1177/00222429241236142**

A FOCUS ON...

CENTRE FOR SPORTS BUSINESS

Advancing sports business knowledge and practice.

The Centre for Sports Business (CSB) is a leading research hub which supports best practice in all aspects of sports business via state-of-the-art insights, consultancy and excellent executive education solutions.

As well as a multidisciplinary team of sports specialists, the Centre has the invaluable support of two excellent football Executives In Residence: founding Premier League CEO and former Liverpool FC CEO (2000-2009), Dr Rick Parry, and current Scottish Professional Football League CEO, Neil Doncaster.

Multidisciplinary world-leading sports business research

The CSB brings together academics with expertise in areas, such as sports analytics, economics, finance, marketing, leadership and governance, to undertake interdisciplinary research with an impact on business knowledge and practice.

With football being such a big part of our city's history, culture and economy, the Centre's research activities delve into a plethora of football business phenomena as well as other sports, including horse racing and large events (eg Olympics).

The Centre's experts undertake substantial economics and econometrics-based research, not only on organisational performance and market dynamics but also on wider ethical issues concerning sport integrity and gambling.

In the so-called era of big data, the use of analytics in the sports industry has gathered momentum, especially with new machine learning and AI applications.

Using advanced quantitative methods, the Centre's researchers are exploring evidence-based solutions, with the development of models to facilitate rating and ranking players and teams, estimating the impact of recruitment decisions on team performance and forecasting results.

THE POPULARITY OF SPORTS, ESPECIALLY IN COMMERCIAL AND BROADCASTING ORGANISATIONS, HAS RESULTED IN AN INFLUX OF CASH TO GOVERNING BODIES, CLUBS AND INDIVIDUALS.

The CSB Team's accounting and finance experts explore how finance flows in and out of different sporting entities, with leading studies on financial and non-financial returns for club owners, distribution models of broadcasting income and cost control systems.

Finally, the Centre's marketing researchers also look into a variety of strategic aspects, including brand management, internationalisation, customer insights and sponsorship.

Impact on policymaking

The CSB research insights are helping shape new rules to tackle issues with excessive betting and match-fixing.

For example, Professors David Forrest and Ian McHale have supported the Department of Culture, Media and Sport policy on the maximum permitted stake on fixed-odds betting Terminals from £100 to £2.

They have also helped define where the risk of match-fixing is most likely to occur, with their investigation being cited in sports arbitration cases going before the Court of Arbitration for Sport.

CSB member and football finance expert, Kieran Maguire, has also contributed to a new report by the government's Culture, Media and Sport Committee warning that the promotion of crypto assets in professional sport is putting fans at financial risk and potentially damaging the reputations of clubs.

He also recently spoke at the first formal meeting on the Football Governance Bill to provide specialist insights on the Independent Football Regulator's ability to address financial mismanagement at football clubs (go to page 18 to read more).

Tailored executive education programmes and business consultancy

As well as a prolific academic production, the CSB has developed excellence in sports business consultancy and executive education, with a range of bespoke programmes for clients including the League Managers Association, Godolphin and The Josoor Institute.

Members also have strong industry connections, holding positions at leading sporting organisations, such as the Premier League, UEFA, The League Managers Association, The Football League, Women in Football, The Gambling Commission, the National Lottery Commission and The Gambling Strategy Board.

Scan the QR code to find out more about our research centres or visit: **liverpool.ac.uk/management/research/centres**

USING MACHINE LEARNING TO PREDICT FOOTBALL TRANSFER FEES

Professor Ian McHale
Professor of Sports Analytics and Director of the Centre for Sports Business

Dr Benjamin Holmes
Lecturer in Sports Analytics

Using advanced performance metrics and machine learning, researchers from the Centre for Sports Business have developed new models to predict transfer fees for professional footballers with greater precision.

Unlike previous work underpinned by basic performance statistics, Professor Ian McHale and Dr Benjamin Holmes' study incorporates advanced player performance metrics, such as plus-minus, action value and crowd-sourced ratings.

THE RESULTS SHOW THESE MORE COMPLEX METRICS SUBSTANTIALLY IMPROVE THE PREDICTIVE ACCURACY OF REGRESSION MODELS.

They also further modelled transfer fees using machine learning algorithms, showing superior forecasting precision, compared to the best performing regression model.

The models are particularly valuable for those making monetary decisions in the transfer market, as they can help identify a benchmark price for players and assess value-for-money from previous decisions.

Value for money in the football transfer market

In 2017, Brazilian international Neymar swapped Barcelona for Paris Saint Germain (PSG) in a world-record €222m deal, as the Parisians chased a first ever Champions League title.

Fast-forward to 2023, PSG had only reached one Champions League final, and the player once dubbed 'the next Pele' moved to Saudi Arabia after six injury wrecked seasons in Paris.

Neymar's stint at PSG is an infamous example of how, despite vast sums of money being exchanged between clubs, decision making on transfer fees remains rather rudimentary in the football industry.

The transfer market has become big business, with 3,279 transfers including a fee in 2023 (up 14.7% from 2022) which translates to £7.6 billion, compared to £5.1bn the year before[1].

Spending large sums on a relatively small number of assets carries high risks, as mistakes made on players who fail to live up to expectations can have catastrophic consequences for clubs, including relegation and bankruptcy.

Advanced player performance metrics improve predictive accuracy

Identifying value-for-money in the football labour market involves searching for metrics that accurately capture the current and future ability of players, and subsequently modelling transfer fees to understand what factors drive the price a club is willing to pay for a player.

Traditionally, studies have focused on basic performance statistics, such as goals scored and minutes played.

However, these fail to capture the true impact of a player on their team and the multitude of on-pitch actions they are responsible for.

To fill this gap, Ian and Ben's study introduces two families of objective player performance metrics:

- **Expected goals[2] plus-minus (xGPM)**, a rating which assesses a team's performance with and without a specific player, by measuring changes in net expected goals from one set of players (teammates and rivals), to the next (eg after a substitution, when a player is sent off)
- **Goal Impact Metric (GIM)**, a deep reinforcement learning action value rating[3] which indicates how player actions contribute to changing (increasing or decreasing) the probability of an episode of play ending in a goal.

Both ratings capture the full contribution of a player's on-pitch performance and are not position specific, as players earn ratings for defensive actions as much as for offensive ones.

In addition to objective ratings, Ian and Ben also included crowd-sourced ratings from sofifa.com[4], specifically overall and potential ratings, which estimate a player's current and future ability respectively.

The study's final dataset[5] was completed with transfer details, player characteristics and experience, and financial information on the clubs involved in the transfer, specifically the fees paid for players over the previous three years.

Then they estimated transfer fee values by performing regression analysis, a technique that can be used to predict the value of a data variable -transfer fees- using information on related variables, such as player performance metrics).

THE RESULTS[6] SHOW ADVANCED PLAYER PERFORMANCE METRICS SUBSTANTIALLY IMPROVE THE PREDICTIVE ACCURACY OF THE MODEL, COMPARED TO THOSE FOUNDED ON BASIC METRICS.

Machine learning based models boost predictive accuracy further

Continuing with the same dataset, Ian and Ben tested the forecasting potential of different models based on machine learning algorithms.

They used part of the sample (1,557 transfers) to train three algorithms[7] on how to predict out-of-sample transfer fees, that is the actual amounts paid for the remaining sample of 389 transfers.

The results demonstrate two of the models, xgbDART and xgbTree, provide the highest precision in forecasting fees, with a remarkable gain in predictive accuracy from linear regression models.

The results also show the most important variable for determining transfer fees is the average price paid in transfers by the purchasing club in the three years prior to the transfer in question.

According to the authors, this variable must incorporate many elements contributing to the transfer fee, including the club's financial strength and league, plus the ability of the players they typically target, as high spending clubs are more likely to show interest in top footballers.

The sofifa overall rating is the next most important variable, and GIM features higher than standard performance measures, which suggests decision makers take into account information over and above the traditionally used basic statistics.

Identifying 'good' and 'bad' transfers

Finally, Ian and Ben compared the predicted and actual transfer fees of historical transfers to identify the best and worst value-for-money transfers, based on the excess money paid by the clubs.

Unsurprisingly, Luis Suarez and Bruno Fernandes were identified as 'good' transfers, while the fees paid for Neymar, Phillippe Coutinho and Harry Maguire were too high.

This is perhaps the most valuable use of the models for clubs, as analysis of transfer fees can help identify a benchmark price for new signings.

The models also provide a prediction interval, from the lowest to the highest estimated transfer price.

This offers the potential to inform negotiations, with buyers aiming for the lowest reasonable price and sellers for the highest reasonable price, within these bounds.

The results also show clubs known for using analytics for player recruitment are better at identifying value-for-money (eg Liverpool, Brentford), while those known for overpaying for players are identified by the model as making less cost-effective decisions (eg Manchester United, Barcelona).

This suggests an added benefit of using the models, as they allow clubs to assess the historical cost-effectiveness of their decisions and use the information to improve current recruitment strategies.

Scan the QR code to read Ian and Ben's paper or visit:
doi.org/10.1016/j.ejor.2022.06.033

[1] Source: **FIFA Global Transfer Market Report 2023**.

[2] Expected goals (xG) is equal to the probability of a shot resulting in a goal, with the main determinant being the location of the shot relative to the goal.

[3] Deep reinforcement learning action value ratings are machine learning based metrics aimed to identify the most suitable sequence of actions to maximise rewards in a particular situation, which in the context of this study would be scoring a goal.

[4] sofifa.com is a website where members offer players' ratings for a wide range of skills, such as heading, shooting, passing etc.

[5] Data was collated for a sample of 1,946 transfers between 11 August 2016 and 29 September 2020. The transfers involved players leaving 31 different leagues and going to 62 unique leagues, with a total of 69 different leagues involved.

[6] The study presents four linear regression models: 1) with basic metrics of player performance; 2) adds only xGPM and GIM; 3) adds only sofifa metrics; and 4) includes all types of performance metrics. Results show model 4 is the best fitting.

[7] Elastic-net regression algorithm, glmnet, and extreme gradient boosting algorithms xgbDART and xgbTree.

CENTRE FOR SPORTS BUSINESS

FINANCE EXPERT HIGHLIGHTS INDEPENDENT FOOTBALL REGULATOR’S BACKSTOP POTENTIAL

Senior Lecturer in Football Finance, Kieran Maguire, has highlighted the backstop potential of an Independent Football Regulator (IFR) to address financial mismanagement at football clubs.

Kieran Maguire
Senior Lecturer in Accountancy

Kieran provided oral evidence, alongside Dr Christina Philippou (University of Portsmouth), during the first formal meeting on the Football Governance Bill introduced into Parliament in March.

They responded to MP questions concerning financial aspects connected to the bill’s cornerstone measure, an IFR for the top five tiers of men’s football in England.

MPs asked for evidence to assess the IFR’s ability to address widespread financial fragility among clubs, as highlighted in the Fan-Led Review of Football Governance, and after notorious examples of financial mismanagement from Everton and Nottingham Forest.

Kieran stressed the benefits of having an independent “regulator with a set of financial rules and observations” that can “nudge people in the right direction”, through “real-time monitoring in respect of finances”.

Rather than “telling clubs how they should behave”, Kieran sees it as a reasonable way to support teams to “identify potential problems at an earlier stage”, diminishing their chances of “getting into a more long-term financial crisis, where the only solution would be administration”.

As well as its “ability to do real-time investigations”, Kieran noted the IFR’s scope to “offer advice or, in extreme circumstances, to look at some form of regime change that allows the appointment of trustees and advisers to assist clubs in precarious financial positions”.

USING EVERTON AS AN EXAMPLE, HE EXPLAINED WHY IT IS OF VITAL IMPORTANCE TO SCRUTINISE CLUB FINANCES, ESPECIALLY WHEN THEY ARE TOO “RELIANT ON THIRD-PARTY OR OWNERSHIP FUNDING”.

While he acknowledged the regulator will not be able to “convert us into a zero-crisis environment”, it has the potential to “turn down the dial” by monitoring “the ability of that funding to be maintained on a medium to long-term basis”.

According to Kieran, when problems arise from owners’ personal circumstances or intentions changing, the IFR “would have regulatory powers and ability to send in a forensic team to take a look and offer guidance to clubs that may not be willing to listen to it under other circumstances”.

He argued this “would perhaps focus some minds where people have historically tended not to listen and take no advice”.

The first formal meeting, held on 14 May, is the first of a series of sessions aimed at scrutinising the legal viability of the bill and the IFR’s ability to improve financial sustainability, ensure financial resilience across leagues and safeguard English football's heritage.

Scan the QR code to watch Kieran’s intervention in Parliament.

OPERATIONS AND SUPPLY CHAIN MANAGEMENT

A TIME-PHASED ROADMAP FOR SEAPORT DECARBONISATION

Professor Dongping Song
Professor of Supply Chain Management

Professor Dongping Song proposes a time-phased roadmap to enable maritime transport decarbonisation, as part of a UK-wide research initiative to develop cleaner and more sustainable seaports.

Based on an analysis of relevant academic evidence and examples of sustainability strategies by some of the most important ports in the world, the roadmap describes the pathway to net zero in the sea transport sector.

The roadmap identifies six interconnected types of measures and shows how these develop across three consecutive stages characterised by increasing levels of port decarbonisation maturity.

The plan offers port-associated stakeholders guidelines[1] to reduce emissions and provides a blueprint to transition to a cleaner energy future for other industries and local and national governments.

Dongping’s research is part of the UK National Clean Maritime Research Hub (UK-MaRes Hub), funded by the Engineering and Physical Sciences Research Council, the Department for Transport, and other associated universities and partners.

Decarbonising the maritime transport sector before 2050

The transport sector is one of the largest greenhouse gas (GHG) polluters globally, and accounts for nearly one third of UK emissions[2].

Maritime transport, as the backbone of world trade and globalisation, plays an indispensable role in achieving a sustainable global economy.

WHILE SHIPPING IS GENERALLY A RELATIVELY CARBON EFFICIENT MODE OF FREIGHT TRANSPORT, MARITIME VESSELS REPRESENT AROUND 5% OF THE UK’S DOMESTIC TRANSPORT GREENHOUSE EMISSIONS, MORE THAN RAIL AND BUS COMBINED[3].

The International Maritime Organisation (IMO) set a series of ambitious targets to lower GHG emissions and reduce global warming.

This includes cutting carbon intensity (ie CO2 emissions) by at least 40% in 2030 and 70% by 2050, and lower overall GHG emissions to reach net zero[4] by the same year[5].

[1] This includes carriers, shippers, port service providers, logistics operators, road, rail and barge operators, as well as port authorities and regulators.

[2] Source: **ONS 2023 UK greenhouse gas emissions, provisional figures.**

[3] Source: **Domestic maritime decarbonisation: the course to net zero emissions – summary of responses.**

[4] Net zero refers to a balance situation in which the total amount of GHGs in the atmosphere is not increased by human activity.

[5] Compared to 2008 levels.

Alongside this, individual countries have announced their own maritime decarbonisation goals.

In the UK, the Transport Decarbonisation Plan[6] sets out commitments and actions to decarbonise the transport system, including maritime, to achieve net zero emissions by no later than 2050.

SEAPORTS ARE PART OF COMPLEX SHIPPING LOGISTICAL NETWORKS WHERE VARIOUS TYPES OF VEHICLES AND CARGO HANDLING EQUIPMENT OPERATE.

In addition to GHG emissions (mainly carbon dioxide and methane), seaports also produce health-impacting air pollutants, such as nitrogen oxides, sulphur oxides, particulate matter, volatile organic compounds and carbon monoxide.

While it is imperative to decarbonise port activities, achieving the ambitious national and IMO 'course to zero' targets requires an understanding of key technical and operational aspects, as well as barriers to accelerate sustainability in the maritime sector.

[6] Source: Transport decarbonisation plan.

[7] The UK-MaRes Hub is a consortium led by Durham University with researchers from Aston, Birmingham, Brighton, City, Cranfield, Liverpool, Newcastle, Nottingham, Sheffield, Solent, St Andrews and Ulster universities.

[8] The study includes an analysis of net zero strategies by the ports of Felixstowe, London. Immingham, Milford Haven, Liverpool, Southampton, Singapore, Los Angeles and Rotterdam.

[9] HVO is a type of biofuel – also known as a renewable diesel – produced from waste vegetable oils and fats.

An UK-wide research hub to enable seaport decarbonisation

The University is contributing to this effort by taking part in a new £21.3m multidisciplinary research partnership led by Durham University.

The UK-MaRes Hub brings together world-leading expertise and supports the sector to develop and commercialise clean maritime fuels and technologies.

The goal is to accelerate decarbonisation and eliminate air pollution from maritime activity in ports and at sea, through multidisciplinary research initiatives involving academics from 13 universities[7].

It also brings together over 70 industrial, civic and international organisations, including shipping companies, ports, equipment and service providers, fuel producers and civic bodies.

Collaboration with University of Liverpool partners, Peel Ports Group, allows researchers to use the Port of Liverpool as a place-based scenario to showcase maritime decarbonisation.

As part of this project, Dongping is leading a pioneering investigation on port operations and infrastructure, and contributing to a parallel study on digitisation, maritime operations and finance.

A roadmap for net zero in the maritime sector

Following a comprehensive analysis of prior evidence and real-life port decarbonisation examples, Dongping presented a time-phased roadmap with strategic solutions to develop smart and greener ports in a 15-year period (2025-2040).

The three-stage pathway is based on a systematic review of academic literature, combined with industrial reports and case studies from some of the most important national and international ports[8].

THE CASE STUDIES SHED LIGHT ON HOW SEAPORTS TAKE STEPS TOWARDS NET ZERO THROUGH SIX STRATEGIC TYPES OF MEASURES: OPERATIONAL, TECHNICAL, INFRASTRUCTURAL, FUEL AND ENERGY, DIGITALISATION, AND POLICY AND COLLABORATION.

The analysis highlights the need for a time-phased plan, that considers the specific role of different measures in the process to develop greener ports.

While operational, technical and fuel and energy measures have a direct impact on port emission reduction, the roadmap shows how their success relies on solid infrastructure, digitalisation and policy and collaboration solutions.

Phase one: decarbonisation restricted by insufficient digitalisation and infrastructures

In phase one, resource optimisation is the focus of operational, technological, fuel/energy and infrastructural measures, with an emphasis on energy efficiency.

This includes upgrading existing equipment (eg LED lighting), phasing in power saving and clean energy options (eg solar panels, HVO-powered equipment[9]) and expanding rail service capacity to facilitate logistics efficiency and emissions reduction.

However, at this stage the unavailability of electrical power supply and infrastructure hinders the transition from fossil fuels to electricity for energy-intensive equipment.

In this phase, some digitalisation measures are present, including smart devices and sensors to collect real-time data and digitise information to enable data-driven optimisation.

However, stakeholders are largely working in silos due to reduced data visibility and the challenge of interoperability (ie the ability of computer systems and software to communicate).

Therefore, data standardisation (formats and platforms), should be addressed to overcome data incompatibility.

For policy and collaboration measures, relevant policies, regulations and financial incentives are necessary to accelerate port decarbonisation locally and globally.

Phase two: greener ports and increasing collaboration

In phase two it is expected port-associated stakeholders design mechanisms to share information and develop joint energy management systems.

Coordination across subsystems and stakeholders improves thanks to digitalisation measures, such as digital twins and tools, mobile satellite communication and the smart grid.

At this stage, infrastructural measures facilitate electrification and introduction of clean energy (eg hydrogen, solar, wind, wave and tidal) for energy-intensive equipment, such as gantry cranes.

Additionally, carbon capture and storage systems are rolled out alongside low-carbon fuel and shore power facilities to support sea vessel decarbonisation.

Stricter regulations and policies must come into force at this stage, and large-scale financial investment and support is needed to implement fuel and energy, and infrastructural measures.

Port operators are expected to collaborate with supply chain partners vertically, and with other ports horizontally, for better operations and energy management.

Phase three: ports as trading, energy and data hubs

Finally, in phase three it is expected more operational activities become integrated, automated and cooperatively optimised, with the support of digitalisation and collaboration.

Technically, small or short-distance vessels such as boats, tugs and ferries are powered by either battery or fuel cells, while large ships are likely to use alternative fuels or be equipped with a carbon capture storage system.

Scaling up green energy and fuel production is essential to meet huge demand from the maritime sector in this phase, with infrastructural improvements including renewable energy and hydrogen production, conversion, transport and storage facilities.

IN ADDITION, ELECTRIC OR SOLAR ROADWAYS CAN BE CONSTRUCTED TO DECARBONISE ROAD TRANSPORTATION.

Digitalisation goes one step further with the adoption of the smart port concept and AI-enabled data analytics (predictive and prescriptive) to improve efficiency and optimise energy consumption.

In terms of policy and collaboration measures, all organisations within the port geographic boundary would share the same net zero vision and work together as an ecosystem.

As ports are closely linked to the regional city, this stage requires collaboration between the port and the city, and cross-industry collaboration (eg steel, cement, and chemical industries) should be considered due to the ports' potential to become energy hubs.

Scan the QR code to read Dongping paper or visit: **doi.org/10.3390/su16041620**

A roadmap of seaport decarbonisation to net zero with time-phased solution measures

	2025	2030	2040
Operational measures	Equipment efficiency Resource scheduling Subsystem optimisation	Information sharing Energy management systems Coordinated management	Integrated operations Automation Cooperative optimisation
Technical measures	Equipment upgrade Electric equipment HVO equipment	Electric large equipment Hydrogen equipment Carbon capture and storage	Electric boats and tugs Electric ferries Alternative fuel for large ships
Fuel and energy measures	Electrification Low carbon fuels, HVO Solar, wind energy	Electrification Hydrogen and derivatives Solar, wind, wave, tidal energy	Electrification Hydrogen and derivatives Scaling up green energy
Infrastructural measures	Energy saving devices Electric charging Rail expansion	Electricity grid Low carbon fuels facilities Shore power facilities	Hydrogen facilities Solar/electric roadways Port energy hub
Digitalisation measures	Digitisation Smart devices Standardisation	Digital twins and tools Mobile satellite communications Smart grid	Smart port AI-enabled data analytics Port data hub
Policy and collaboration measures	Policy and regulation Incentives and finance Port community systems	Enhanced regulations Supply chain partnerships Port alliances	Port ecosystem Port and city collaboration Cross-industry collaboration

EXPLORING THE IMPACT OF THE PARIS AGREEMENT ON ISO 14001 CERTIFICATION MARKET VALUE

Dr Irene Margaret
Lecturer in Strategy and International Business

Dr Irene Margaret's research shows international environmental management certifications, such as ISO 14001, increase market value in the presence of a strongly binding multilateral agreement.

An analysis of over 3,000 multinational corporations (MNCs) demonstrates the institutional pressure exerted by the commitment to environmental obligations in the Paris Agreement, resulted in approximately $315m (£250m) increase in market value.

However, the study shows differences in the value attached to ISO 14001-certified MNCs from emerging and advanced economies, with a greater positive financial impact for the former.

The results also indicate investors attach higher economic valuations to certified international organisations when they operate in foreign countries with stringent environmental regulations.

THE STUDY HIGHLIGHTS THE IMPORTANCE OF STRONG MULTILATERAL ENFORCEMENT, AS IT INCENTIVISES RESPONSIBLE CORPORATE BEHAVIOURS, TO ATTRACT INVESTOR INTEREST.

From a managerial perspective, the investigation emphasises the importance of aligning corporate sustainability with geographical diversification strategies, while legally it stresses the role of global operations monitoring to ensure environmentally responsible practices.

The value-generating power of the ISO 14001 certification

International management standards are considered pivotal tools to achieve Sustainable Development Goals (SDGs), as standards help facilitate the dissemination and adoption of sustainable practices, through a harmonised, stable and globally recognised framework.

As the most prominent global standard for eco-management systems, ISO 14001 provides a framework for organisations to improve environmental performance.

Adhering to this voluntary standard signals a commitment to taking proactive measures to minimise a firm's environmental footprint, comply with legal requirements and achieve environmental objectives.

The popularity of ISO 14001 has increased dramatically in the past decade, reaching over half a million certifications across nearly 200 countries[1] in 2022.

While this reflects global interest in addressing climate issues, there is evidence of lower market values of ISO 14001-certified firms and negative market reactions, casting doubt over the standard's value-generating power.

[1] Source: ISO Survey 2022 (www.iso.org/the-iso-survey.html).

Paris Agreement increased value of ISO 14001-certified MNCs

Before the 2015 Paris Agreement, global environmental accords lacked sufficient commitment from the signing parties, leading to institutional failure to encourage actions from MNCs.

In contrast, the Paris Agreement was the first international environmental treaty which established binding targets for advanced and emerging economies.

In their study, Irene and colleagues Dr Frederiek Schoubben and Dr Ernst Verwaal from KU Leuven, propose that ISO 14001 value-generating potential is enhanced by the Paris Agreement.

They calculated the market value of 3193 ISO 14001-certified MNCs with headquarters in 60 different countries, three years before and after the adoption of the Paris Agreement.

The results indicate ISO 14001 certification increased market value more strongly post-agreement, with the economic advantages constituting approximately £248m extra.

This suggests market actors place greater attention on sustainability practices in the presence of a strongly binding multilateral agreement, as it elevates the need for a reliable, standardised reference of business commitment to climate action.

As opposed to having more international agreements, stronger enforcement at the multilateral level appears to be more effective in driving corporate actions.

Country of origin effects: greater market value for companies from emerging economies

Although a strong multilateral agreement increases investor appetite for ISO 14001 certification, the results show financial reward varies depending on where the company is headquartered.

The analysis indicates greater post-agreement market value for ISO 14001-certified companies from emerging economies (EM-MNCs) than for those in advanced economies (AE-MNCs).

The authors argue that, while the Paris Agreement creates a common expectation of global environmental sustainability in all countries, EM-MNCs are subject to a lower reference of corporate behaviour compared to counterparts in advanced economies.

Exposure to host countries with stringent environmental regulations

Although this finding seems to suggest EM-MNCs could easily exploit the ISO 14001 certification to boost investor confidence, this is contingent on their exposure to host countries with strict legal environmental standards.

The study indicates managers who use certification as part of a greenwashing exercise should be aware that market actors are less likely to value their efforts when the firm's geographic diversification strategy leads to lower exposure to stringent regulations.

In other words, the study shows market incentive to adopt the ISO 14001 standard is greater for MNCs in "pollution halos" than those exploiting institutional learning in "pollution havens."

FROM A LEGAL PERSPECTIVE, THIS SUGGESTS POLICYMAKERS SHOULD NOT SOLELY RELY ON EMS ADOPTION TO ACHIEVE SDGS WITHOUT ENSURING ENVIRONMENTAL STRINGENCY.

This means efforts to encourage corporate social responsibility through formal law may not be effective unless MNCs are monitored by third-party agencies and exposed to strict regulations across their global operations.

Scan the QR code to read Irene's paper or visit: **doi.org/10.1002/gsj.1490**

HOW IMAGINARIES SHAPE ACTION AGAINST CLIMATE CHANGE

Dr Manuel F. Ramirez
Lecturer in Organisation Studies

Dr Manuel F. Ramirez presents a new classification of climate imaginaries that explains how understanding and actions to address the climate crisis change over time.

Manuel's investigation refutes the idea that all climate imaginaries are the same, suggesting there are three main kinds of imaginaries, and also different ways to engage with them.

The findings suggest climate imaginaries are not static and continually evolve, but slow reaction to the climate emergency is connected to organisations blocking the development of novel imaginaries.

Manuel's study is part of a wider investigation that aims to unravel how new climate imaginaries are blocked at a micro-organisational level and how internal activists can facilitate a move towards more ambitious sustainable approaches.

Climate imaginaries and slow action against climate change

Climate change is here and getting worse, but we are not acting fast enough to address it.

Despite the growing number of natural disasters ravaging the planet and causing animal and human habitat loss, displacement and death[1], the need for radical action is generally met with slow responses from people, governments and corporations.

Several researchers have linked this sluggishness to climate imaginaries, which are collectively accepted man-made significations that guide human thinking and action on whether to address (or not) climate change and how.

The main implication is that to change how humans think and act in relation to the climate crisis, societies must change their fundamental significations—their imaginaries.

ADHERENCE TO DIFFERENT IMAGINARIES LEADS TO A VARIETY OF STRATEGIC APPROACHES TO SUSTAINABILITY.

For example, a 'fossil fuels forever' imaginary based on the idea that fossil fuels will always be available will lead organisations to keep things as they are.

On the contrary, a 'sustainable lifestyles' imaginary that assumes climate change is caused by our current economic system, would lead to the development of more sustainable living.

Prior research has identified a large list of climate imaginaries[2], but often has failed to explain clearly how they emerge, change and relate to one another.

A new tree-like classification of climate imaginaries

To shed light on these questions, Manuel studied climate imaginaries through a qualitative analysis of the initiatives presented at the 26th UN Conference of the Parties (COP26) pavilion area.

The UN COP is a global conference to negotiate agreements on climate action, with the pavilions specifically dedicated to countries and NGOs presenting visions and proposed solutions.

Manuel analysed a variety of activities, including presentations, wall messages, videos, posters, brochures, merchandising, interactive workshops, models, etc, and semi-structured interviews with organisers.

The findings indicate there are three main types of interdependent imaginaries - trunks, branches and twigs - which receive varying levels of acceptance and can support or conflict with each other.

Manuel also identified three ways in which organisations engage with imaginaries by reinforcing (supporting an existing imaginary), branching off (presenting a new imaginary) and grafting (creating hybrid imaginaries)[3].

The risk involved in supporting new climate imaginaries

While supporting each type of climate imaginary brings opportunities, the analysis also suggests different levels of risk for those engaging with them.

The trunk category refers to central imaginaries, such as 'climate change' or 'science'[4], that are widely accepted and reinforced individually or simultaneously by most climate actors.

Supporting a trunk entails the lowest risk and allows organisations to orientate action (eg developing technical solutions), connect their activities to the imaginary, even if it is not their main mission, and expand support to other related trunks.

Stemming from trunks are branches, which refer to non-universally shared imaginaries that endorse specific positions on climate change and can exist in tension with other branches.

For example, while both sit under the 'climate change' trunk, the 'techno-market' imaginary emphasises solutions based on technological innovation and market forces, and the '1.5°C' imaginary stresses the need to keep temperatures below 1.5°C from the pre-industrial era[5].

Choosing a branch involves higher exposure to criticism, but organisations may do so to show "progressiveness", enabling them to demonstrate leadership in their area, be seen as pioneers and differentiate from competitors.

However, the riskiest position is for those reinforcing or branching off twig imaginaries, which are offshoots of branches that represent the most novel approaches to climate change.

Twigs are tertiary imaginaries currently not supported by an important group of people, leaving organisations open to critique because of their newness and potential to be a threat to hegemonical approaches.

For example, the 'citizen's role' stems from the more accepted branch 'sustainable lifestyles' but opens questions about how promoters are managing climate change before asking people to commit to sustainable action.

Risk is even greater for those branching off (introducing) a new twig imaginary, such as the 'cryosphere' which stresses that icy parts of the world (eg ice caps, glaciers, polar caps) are central for the thermo-regulation of the planet.

While this twig strongly reinforces the '1.5°C' branch and the 'science' trunk imaginaries, it also makes the controversial claim that efforts to contain global warming will fail if the 'cryosphere' imaginary is not embraced.

THE SAME GOES FOR THE 'METHANE' TWIG, WHICH EMPHASISES LIMITING TEMPERATURES WILL ONLY BE POSSIBLE IF METHANE IS CONSIDERED IN GAS REDUCTION AGREEMENTS.

A starting point for new research avenues

Manuel's research also provides a valuable starting point for researcher-practitioner collaborations exploring the creative imaginary process, including internal barriers and mechanisms to dismantle unsustainable imaginaries.

The study also highlights the importance of context in characterising imaginaries (eg while at societal level 'climate change' would be a branch compared to science or democracy, it becomes a trunk at the COP).

This means, future investigations must consider the "topic" around which climate imaginaries are developed and the "location" where they emerge and consolidate (eg big corporations, mass media, conferences).

Manuel also notes the importance of the medium used to convey imaginaries effectively, suggesting an interesting space for new research.

Scan the QR code to read Manuel's thesis or visit: **theses.hal.science/tel-04545430**

[1] Source: **Intergovernmental Panel on Climate Change**.

[2] Other examples of climate imaginaries include: 'techno-market', 'climate apocalypse', 'techno-optimism', 'ecological modernisation', 'disruptive innovations', 'system change', 'human hubris', etc.

[3] Grafting consists in presenting hybrid imaginaries that are the result of connecting two or more twigs, a branch and a twig form another branch or multiple branches.

[4] In the context of COP26, the 'science' imaginary referred to science as something which anchors climate change in reality, focusing actions and grounding discussions into facts.

[5] The Paris Agreement -1.5°C global warming target defines a point for the world to aim for to avoid many of the deadliest effects of climate change.

CREATING AN INCLUSIVE, FUTURE-PROOF HYBRID WORKPLACE FOR DIVERSE WORKING FAMILIES

Dr Laura Radcliffe
Reader in Organisational Behaviour

Dr Rachel Ashman
Senior Lecturer in Marketing

Professor Caroline Gatrell
Professor of Organisation Studies

Management School's academics, Dr Laura Radcliffe, Dr Rachel Ashman and Professor Caroline Gatrell, have created 'Future Families Work' (FFW), a project to help businesses foster inclusive, family-friendly and hybrid workplaces.

Developed in collaboration with Lancaster University and organisational consultancies – Avenir Consulting, How Do You Do It and Head Office – the project's ambition is to build a business network where organisations can find support via a variety of training resources, website, events and working partnerships targeting organisational practice and policy.

Drawing on extensive research insights from organisational and management studies, the team has created a new toolkit to empower organisations to overcome the diverse needs of the modern workforce.

This evidence-based guide provides tools to help managers and employees challenge assumptions about traditional definitions of a "working family" and explore practices to better serve the needs of working families – particularly those with parental responsibilities.

The FFW toolkit is a useful "quick-start" guide to navigate diverse employee circumstances, including changes to the long-standing nuclear family model, home-office working suitability, and barriers to work/family conciliation.

"In today's rapidly changing organisational landscape, the lines between work and family life blur like never before," said Laura.

"Yet, our research has consistently demonstrated, across diverse groups – including dual-career families, single parents, blended families, and families coping with the COVID-19 pandemic – that current policies and practices to support working families do not adequately do so and are failing to keep pace with the rapidly transforming work and family lives of contemporary families.

"This risks significant consequences for working families, organisations and the UK economy."

DIVIDED INTO THREE SECTIONS, THE FFW TOOLKIT OFFERS A DYNAMIC SET OF RESOURCES TO BUILD TRUST AND SUPPORT EMPLOYEES IN A HYBRID CULTURE, EMPOWER DIVERSE WORKING FAMILIES AND REDEFINE WHAT PROFESSIONALISM MEANS IN THE NEW SOCIAL AND TECHNOLOGICAL CONTEXT.

This includes specific actions to facilitate building self-awareness around professional beliefs, facilitating inclusive conversations and fostering empathy for team members facing diverse family challenges.

The toolkit also presents research findings and practical tips to understand the evolving dynamics and unique circumstances of working families across the UK by delving into three key areas: managing stigma, addressing caregiving support and understanding fluctuating support needs.

It addresses common concerns faced by home-working mothers, such as managing domestic responsibilities, creating boundaries and maintaining a healthy work/life balance, as well as valuable insights and actionable steps for employed fathers.

The toolkit also includes a pack of cards to encourage a critical debate around current societal and organisational beliefs on what it is to be a good professional.

This interactive tool has been designed to initiate conversations on what professionalism means, and ultimately, the collective creation of an explicit definition of professionalism that best aligns with the unique goals of the organisation.

THE TOOLKIT CAN BE ACCESSED DIGITALLY ON THE FUTUREFAMILIESWORK.ORG.UK WEBSITE, WHICH ALSO INCLUDES USEFUL BLOGS AND UPDATES ON NEW RESEARCH-BASED INSIGHTS.

Speaking about the project's future ambitions, Rachel said: "We want to spread the word and teachings in our toolkit far and wide through an impactful digital footprint which raises the issues of hybrid working and diverse family.

"One of our objectives is to create a 'Future Families Work' network, engaging managers and businesses interested in embedding the findings of our toolkit into their organisations, to contact us to arrange workshops, or download and use the toolkit and then feedback to us on how it has been impactful.

"We are encouraging a community of contributors to share their insights on our blog, shape discussions and foster knowledge exchange which can –hopefully - in the future, help us to contribute to the policy changes around flexible working and working family support.

"Our project is important because it illuminates challenges around shifting work practices, family demographics, inclusion and reforming organisational cultures - offering practical guidance which impacts employee experience, productivity, and an organisation's ability to retain employees."

MODERN SLAVERY IN SUPPLY CHAINS EXPERT ADVOCATES FOR STRICTER LEGISLATION AND REWARDS FOR COMPLIANT FIRMS AT HOUSE OF LORDS

Dr Bruce Pinnington has stressed the need for stricter supply chain legislation and rewards for compliant firms, during a House of Lords Select Committee session looking at the effectiveness of the Modern Slavery Act.

Dr Bruce Pinnington
Senior Lecturer in Operations and Supply Chain Management

Held on March 18, the public evidence session specifically focused on Section 54 of the Act on transparency in supply chains (TISC), which requires large firms to prepare a slavery and human trafficking statement for each financial year, with detail on the steps taken to find issues and eradicate them.

Bruce was joined by Sian Lea, Business and Human Rights Manager at Anti-Slavery International, and Baroness Young of Hornsey OBE, Chancellor of Nottingham University and author of a current Lords Private Member Bill on Modern Slavery.

Mandatory due diligence

In response to a question by Chair of the Committee, Baroness Frances O'Grady, on whether Section 54 is "fit for purpose", Bruce highlighted factors limiting commitment to discovery-related actions, which are a necessary pre-cursor to disclosure.

Despite acknowledging the Act's usefulness in increasing awareness, Bruce argued that while "it's supposed to be levelling the playing field and engendering a race to the top", the Act is "neither of those things, unfortunately."

Bruce noted these policy objectives will not be achieved until due diligence becomes a statutory obligation for all large organisations, as now it's seen as "a competitive disadvantage for them to go investing in what can be quite expensive supply chain mapping and investigations."

Lack of incentives for compliant firms

However, he also pointed out that alongside increasing costs, the Act doesn't currently incentivise good businesses practice and it's perceived as jeopardising due to the potential to cause reputational damage.

Bruce explained the Act is not "putting anything on the benefit side of the equation for anyone who is transparent and honest, and says: look I have found modern slavery in my supply chain and I have done something about it."

HE URGED POLICYMAKERS TO CHANGE THE EXISTING RHETORIC, GOVERNMENT PROCESSES AND THE REPORTING PROCESS (EG THROUGH NGOS) "TO REWARD THOSE FIRMS THAT ARE ACTUALLY DOING SOMETHING, THAT ARE INVESTING SOMETHING," BECAUSE OTHERWISE THEY WILL PRIORITISE AVOIDING COST AND RISK.

Issues in TISC reporting

In his evidence, Bruce also referred to research undertaken with Professor Jo Meehan regarding issues on modern slavery in supply chains reporting, and emphasised how a substantial amount of businesses are publishing lists of policies without explaining their relevance and ways to enforce them.

According to their findings, it's easier for firms to report on their structure, policies and training, "but even in those areas the structural descriptions and statements are generally very basic and few describe the governance structures."

Bruce underlined the importance of obtaining detailed information, such as "what sort of oversight committees they have in place, what processes they have, etc", as part of the descriptions required in TISC reports.

He noted TISC reports currently include "too little on enforcement policies and actions" and very few businesses "are actually sharing the policies."

Moreover, Bruce warned that in many cases "there was no indication that they had even done mapping", with only two out of 95 firms in one of their studies specifically referred to supply chain mapping.

He also drew attention to the fact that this should be highly concerning, as all of the organisations in the study were Government suppliers.

Existing knowledge gaps and education

Furthermore, Bruce referred to a different study where results indicate some of the practitioners "didn't fully understand what a supply chain was" and often focused on tier one supplies, which suggests "they weren't actually even thinking vertically at all."

Bruce posited that while they claimed "they were doing more supply chain mapping", in practice they were actually "doing supplier management, not supply chain management."

According to Bruce, these findings suggest that in addition to stricter and more regular assessment of supply chain operations, "there's an educational piece there and that's something that also should be picked up in law as well."

Further assessment and improvements

Following the session, former Independent Anti-Slavery Commissioner (IASC), Dame Sara Thornton, thank Bruce and expert colleagues for their "clear and measured evidence to the committee" and stresses she "could not agree more on discovery/disclosure."

Following its appointment in 24 January 2024, the House of Lords Select Committee on the Modern Slavery Act 2015, has until the end of November to report on the effectiveness of this piece of legislation.

This includes an assessment on how the Act's provisions have been implemented, how it has been impacted by recent political developments and whether it requires any improvements.

As well as increasing awareness on the research on modern slavery undertaken at the Management School and the Centre for Sustainable Business, Bruce's participation will enhance the prospects of involvement in further related developments in public procurement policy.

Scan the QR code to watch Bruce's intervention in Parliament.

SHAPING SUSTAINABLE FUTURES COURSE CONTINUES AFTER SUCCESSFUL PILOT

Aligned with the wider goals of the School's Centre for Sustainable Business (CSB) and following a successful pilot roll-out, the Shaping Sustainable Futures (SSF) short course will return for its second run in January 2025.

Launched in Autumn 2023, SSF is a three-day thought-provoking course created to empower and grow local sustainability leaders.

Drawing on CSB research, the course has been designed to enhance the strategic approach to sustainability of current professionals, by empowering them to reimagine how their organisations could contribute to shaping a better future.

The second cohort welcomes decision-makers who hold sustainability-related roles or can influence their organisation's sustainability strategies, with applications open for those wanting to join in January 2025.

The course features a series of interactive workshops led by CSB specialist researchers and industry experts and offers participants evidence-based insights to help them develop, improve and implement effective sustainability strategies.

IN THESE SESSIONS, THE DELEGATES CO-CREATE AND EXPLORE A RANGE OF ALTERNATIVE FUTURES TO REVEAL THE IMPACTS OF CRITICAL UNCERTAINTIES, AND CRUCIALLY THEIR AGENCY TO SHAPE A PREFERABLE FUTURE.

The workshops provide space for deep reflection and debate to advance participants' 'futures literacy' to enable them to grow their impact as leaders in sustainability.

CONCEIVED WITH THE IDEA OF ENHANCING AND GROWING FUTURE SUSTAINABILITY LEADERS, THE COURSE IS STRUCTURED AROUND THREE FULL-DAY SESSIONS.

During two consecutive days, delegates will take part in interactive sessions and experiment with 'futures thinking' tools and approaches, starting on 21 January 2025, and will reconvene for day 3 on 26 March 2025 to share their progress and strategic plans.

"The vision behind the course is to show managers how they can create a more sustainable future and equip them with the skills needed to build it", said CSB Director and Programme Leader Professor Joanne Meehan.

"We first look at where we are heading, moving from probable futures to plausible futures and ultimately, taking time to explore preferable futures, and asking 'preferable for who?'

"This means taking a systems perspective, looking at blind spots in our attention, challenging the assumptions we make and exploring how we can collectively shape fairer and sustainable futures for our communities, organisations, and across industries."

Successful pilot experience

The first run of the SSF course concluded on Wednesday 17 April and drew delegates from across the northwest, representing a diverse set of organisations including corporates, SMEs, start-ups, and not-for-profits.

In his keynote address on the course, Jeremy Nicholls, Sustainable Development Goals (SDG) Assurance Framework Lead of the UN Development Programme and CSB Advisory Board Member, stressed the importance of futures thinking in sustainability:

"We all know now that the world is in something of a crisis zone, with climate, with the destruction of nature and with the breakdown of social systems."

"And we need to start with a real urgency thinking about what future we want the world to look like, and what we're going to do to make it like that as far as is possible.

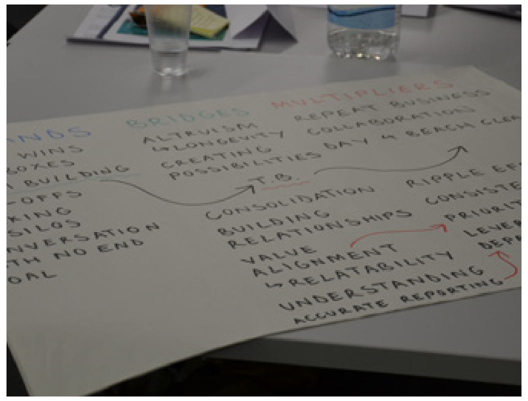
"It's always good to get people who are in businesses in rooms sharing their experiences about sustainability and what they're trying to do at a personal level, in their businesses, and then linking that to the world's needs."

For Creative Director at Phase Creative and course delegate, Sophia Avraam, the experience has transformed her views on sustainability and found particularly enjoyable the discussions on the importance of bringing nature into business decisions:

"Some organisations are now having nature have a seat at the table in all of their corporate and business decisions."

"It has really inspired me to always think of ways that we can incorporate nature or other SDGs into the business.

"That's something I definitely aim to work towards with the clients I work with, raising awareness of the SDGs and how we can implement them into our businesses for, hopefully, a more sustainable future."



PHD STUDENT PRESENTS RESEARCH AT UN CLIMATE CHANGE CONFERENCE

Louise Postema, a first-year Operations and Supply Chain Management (OSCM) PhD student, was invited to attend and speak at the United Nations Climate Change Conference (COP28), in late 2023.

Louise contributed to the "Bundling private sector innovation and climate action, Together: Strategies and lessons for collaboration" event hosted by the Think-and-Do-Tank Clim-Eat.

During the event, Louise shared her research on smallholder climate change vulnerability in Africa and how this vulnerability constitutes a supply chain risk for companies sourcing from these farmers.

HER RESEARCH SEEKS TO GAIN A BETTER UNDERSTANDING OF HOW AGRI-FOOD PROCESSING AND HANDLING COMPANIES ARE LOOKING AT AND MANAGING SUCH RISKS.

In particular, she plans to analyse how we can enable and help companies – for example with financial support – to invest in the adaptation of their smallholders in order to manage supply chain risks.

This entails creating an investment case for development and mobilising significant resources for smallholder adaptation.

At COP28, Louise's research received interest from organisations, such as the International Fund for Agricultural Development, Climate Policy Initiative, Green Climate Fund, International Livestock Research Institute, MasterCard Foundation, African Development Bank, World Business Council for Sustainable Development and Dutch Ministry of Foreign Affairs.

Professor Andy Lyons, Head of the OSCM Group, congratulated Louise and commented: "It was a privilege and exceptional achievement by Louise to be invited and contribute to COP28."

"The experience and the connections are already catalysing her research and boosting the reputation of the School and University."

FIRST MODERN SLAVERY POLICY PANEL WITH PRINCES GROUP

We have partnered with international food and drink group, Princes, for their first Modern Slavery Policy Panel.

Held on 18 January, the roundtable event convened an expert working group led by the School's modern slavery specialists, Dr Bruce Pinnington and Dr Alexandra Williams-Woods, alongside Princes Ltd. Global Head of Environmental and Social Sustainability, Paul Williams.

"This first meeting sets the foundation to develop the panel's vision of working collaboratively with a variety of stakeholders to define 'what works' in encouraging organisations to take meaningful action on modern slavery within their supply chains", said Paul Williams.

"The goal is to bring together academic research, third sector expertise and experience from the business world to discuss issues involved in tackling modern slavery and find ways to advocate positive change in policy and business."

This includes desirable changes to relevant legislation, official guidance and public procurement, as well as best practices to effectively counter modern slavery in global supply chains, while simultaneously improving business performance.

In particular, the first panel meeting focused on 'what we need to see happen', and how this could be achieved and monitored across four main themes:

- Transparency in supply chains: section 54 guidance of the UK Modern Slavery Act 2015
- The role of future global legislation and policy
- Public procurement practices
- Practitioner best practices.

In addition, modern slavery experts facilitated discussions with non-academic stakeholders on how research can fill existing evidence gaps and offered a 'bigger picture' perspective on the challenges and opportunities in the wider business context.

"The event has given us the opportunity to share our research and discuss what good practice in procurement practices might look like and what changes to legislation, policy and guidance are needed to understand, tackle and prevent modern slavery in supply chains", said Dr Alexandra Williams-Woods.

"The panel discussions provide invaluable insights on how, and to what extent, organisations are dealing with this problem.

"By gaining a better understanding of the practical issues organisations face, we can offer existing evidence-based guidance and develop new research projects for issues which are yet to be explored."

Promoting positive business action on modern slavery

The first Modern Slavery Policy Panel meeting is the initial milestone in a long-term initiative to pool expertise from stakeholders and expand debates on new aspects of dealing with modern slavery in supply chains.

The panel roundtable events are part of a wider knowledge exchange project, in partnership with Crown Commercial Services, Chartered Institute of Procurement and Supply, Liverpool City Region Combined Authority, International Slavery Museum and Stronger Together.

THE RESEARCH TEAM, IN COLLABORATION WITH COLLEAGUES FROM THE MANAGEMENT SCHOOL AND BEYOND, HAVE UNDERTAKEN AN EXTENSIVE RESEARCH PROGRAMME OVER THE PAST FIVE YEARS FOCUSED ON MODERN SLAVERY AND BUSINESS.

The research is building significant evidence which reveals:

- What organisations say they are doing to tackle modern slavery in supply chains
- How common approaches counterintuitively maintain conditions for exploitation
- How supply chain managers make sense of their efforts to tackle modern slavery
- The critical (but often under resourced) role of supply chain discovery
- How managers frame and engage with modern slavery and the impact it has on supply chain and procurement action.

The aim of this project is to promote positive and evidence-based change in UK business, utilising innovative research produced by the wider research team.

TO DO THIS, THE RESEARCH TEAM ARE PARTNERING WITH STAKEHOLDERS IN THE POLICYMAKING, BUSINESS PRACTICE AND COMMERCIAL SECTORS.

In addition to ongoing research, they are producing relevant content for training/awareness raising, hosting workshops and knowledge exchange events.

The focus of these activities is to facilitate the implementation of best practices and engage with a network of experts to consider future opportunities for knowledge exchange and utilisation of research.

Learning to make a difference from an enterprising and vibrant world city of culture.

AACSB ACCREDITED
EFMD EQUIS ACCREDITED
ASSOCIATION OF MBAS
CABS CHARTERED ASSOCIATION OF BUSINESS SCHOOLS

Follow us on social media:

@ULMS_research
University of Liverpool Management School - Research

University of Liverpool Management School
Chatham Building, Chatham Street,
University of Liverpool L69 7ZH
T: +44 (0)151 795 3000

Research enquiries
E: ulmsphdenq@liverpool.ac.uk

Business enquiries
E: busdev@liverpool.ac.uk

Media & Communications enquiries
ulmscomms@liverpool.ac.uk

liverpool.ac.uk/management/