

Inside FCA Podcast: Research interview with Dr Karen Croxson

OI: Hello and welcome to the Inside FCA podcast. I'm Ozge Ibrahim, and in this episode I'll be speaking with Dr Karen Croxson, who is Deputy Chief Economist and Head of Research, Economic Data and Behavioural Science at the FCA, to find out about the important work of the research department and its impact. And I'll be asking Karen about the variety of work on offer for data scientists for those seeking a career at the FCA.

Hello and welcome, Karen.

KC: Hi Ozge, thanks very much for having me.

OI: Can you tell me a bit about your role at the FCA?

KC: Yes, absolutely. So, I am Deputy Chief economist at the FCA. I'm also the Head of Research, which means these days I'm leading a very interdisciplinary programme, integrating in particular disciplines like economics, data science and behavioural science, really to understand the markets that we regulate, help design our policy and regulatory interventions and also feeding into a wider evidence based strategy and improving our internal operations.

OI: And if we focus on the research specifically, why do we need it?

KC: Well, that's a great question. I think for me, the role of research is best understood in the context of what we are trying to achieve overall as the UK's financial regulator, the financial markets play a really vital role in all of our lives, and our job is to ensure that markets work well. So, what does that mean? It's about protecting consumers, promoting effective competition in their interest, and also enhancing the integrity and the resilience of the wider financial system. So, that's quite a lot. As a regulator, we're very outcomes focussed. So, across the markets, in the sectors that we're regulating, we expect consumers to receive fair value to be sold suitable products and services, be treated fairly, be able to participate in the markets with confidence and have sufficient access. So, these are important outcomes for us and where we identify potential for significant harm, we take steps then to design effective policy or interventions, and then we're really keen to evaluate the impact of that and really learn from that and feed that back into our wider work. We want to be looking ahead and anticipating issues as much as possible, being really proactive and forward looking so that we can get to those good outcomes for consumers and understand any changes that are afoot, ahead of time.

So, good research can actually underpin all of this, and it can give us very helpful evidence to inform our decision making across the scope of all of that. For instance, research and thought leadership can help us get ahead of some of the potential harms and issues, help us look around corners, if you like and inform our horizon scanning work. We can be using rigorous empirical evidence to really help diagnose the harm in the markets, shape those interventions and policy options, and then design and test the actions that we might take. We can use scientific work to really estimate scientifically what works. So here, for instance, we might use randomised controlled trials or other ways of estimating the potential impact of the policy options.

And then as I say, once we've made an intervention and got involved in a market to try to achieve a change, research can continue its work and inform our strategy for monitoring and helping us really evaluate the impact of our actions. So, there we might use some techniques in causal inference.

So really, it's about the regulatory lifecycle, if you like, overall. It's worth saying that we can also at the same time be using research to explore some new scientific techniques and methodologies that could improve the way we work in the future. So, you don't necessarily get to action all of these and capture those opportunities today, but a year or two perhaps there are new ways as a regulator of harnessing data and technology, for instance, and scientific techniques, we might be able to harness novel or large scale data sources or make sure that we're at the cutting edge of some of the technical methods for things like cost benefit analysis or estimating that causal impact.

OI: What kind of expertise do you require from your teams to do this work?

KC: So, our teams combine a real range of skill sets and expertise to develop the thinking and insight that we need to be evidence based. We're an economic regulator, so economics is always there as, if you like, a bit of an organising framework for much of our research, but increasingly the work is very interdisciplinary. We need a range of toolkits and contributions. I mentioned behavioural science, there's also finance and computer science. Our work is often very empirical. I've hinted at that, I think with the references to data and increasingly we're about leveraging large complex data sources, linking up data in creative ways to get an edge with the insight. And so, toolkits from the world of econometrics, data science are a very important. Data engineers and their work is very important to harness all of that data efficiently and effectively and safely. And one thing I want to mention is, as well is, systems thinking, which can play a valuable role here. So, markets are very complex, adaptive networks. That's one way to think about it. We need to be taking a systems view, integrating and understanding of the demand side, how consumers are taking decisions, their experiences, the supply side, the firm behaviour. And then the overall functioning of the market, and then thinking as well about how all of that might develop. So that systems perspective is very valuable.

Some of our team members are bringing quite a lot of depth in specific disciplines, so they might come from quite a strong academic background with a PhD or a postdoc in a relevant area. Others are coming with some very rich applied expertise. And what I would say is that they all need very, very strong, critical faculties. They need to be very good at analytical problem solving, have a strong ability to work as a team and really partner with stakeholders across our organisation, collaborators internally and externally, can perhaps say a little bit more about that later. And in some of our work, we really need to be able to move quite quickly under time pressure to, if you like, frame and structure quite complex, ambiguous problems and then use some quite strong conceptual reasoning and quite a hypothesis driven approach to our work to get to rapid insights across all of it, we need to be able to communicate well. So, we need people who can communicate or want to learn how to communicate in a very accessible top-down way. What is the point of the work? What have we really found? And get quite quickly to the 'so what' from the regulatory perspective and for instance, for our policy making.

There are quite a few teams across the FCA that are active in research and that we, you know, collaborate with or provide research and contribute to this wider agenda of scientific work. This includes, just to mention a couple of examples: There's a team that specialise in market research and produced our flagship Financial Lives survey, which is a very rich survey of consumers across the UK and various aspects of their experience in financial markets. And we utilise that a lot. And there's a team focused, particularly on emerging technologies and many teams as well, as I've mentioned with these, combining these skill sets in disciplines like economics, behavioural science and data science. And then I would also say that we collaborate a lot with academics, and we might touch a bit more on that later on as well. We do this on a fairly regular basis. This has been a really valuable exercise for us. It allows us to tap deep expertise and cutting edge thinking and specialist areas and really bridge into some of the latest developments in academia very well. But of course, our own focus is always very applied and focused on real world impact. So, I think that's a nice opportunity for academics that might like to partner with us as well to see some of their work and thinking get into policy impact.

And then one thing I would say it's not quite a skill set, but it is a critical enabler, enabler for us these days. I mentioned data, we're leveraging a wide range of data resources from very qualitative survey data through to very large-scale transaction data. We might be harnessing web scraping, linking up data in interesting ways. And so this is a focus for us, and we need a lot of skill sets and technologies to support that kind of work. So, for instance, recently in some of our work, we've been linking large scale administrative survey data that gives you a really good panoramic on individual consumers with some large-scale credit file data, obviously doing that in a very anonymised way, but using that really to get a deeper insight into vulnerability among consumers so that we can consider how firms can best support them, how we can best support them as a regulator. And as I said a source I'm a particular fan of is our Financial Lives survey. It's a really rich source of insight, really fantastic time series data, robust UK wide covers, financial services, the different retail sectors and we share lots externally through the team there. So, you can check out our dedicated web pages to find out a bit more about that data asset.

OI: And that's a lot of work. How do you prioritise what the teams will investigate and when?

KC: So, the markets we regulate, they're really vast, they're evolving and there are many, many important open questions where some research and analysis could make a difference. So, as you hint at prioritisation is really important and paramount and we select projects to take forward based on a few different lenses. So, the first would be the relevance to our regulatory objectives as the FCA and within this our particular strategic priorities and those target outcomes that I mentioned, we're looking for impact from our work. Could it really make a positive difference if we do this piece of work to the lives of consumers in the ways that, you know, we carry a mandate, what could be the scale and the nature of the potential harm and our ability to address it. We're interested, of course, in the feasibility of the research.

Not everything is always feasible. What's the availability of relatively good data that might allow us to get an entry point into some of the questions?

Availability, of course, of people with the right skill sets to produce rigorous research, at least at a particular point in time, is a consideration.

Like all organisations, we've got very finite resources, we've got some fantastic people, fantastic data, but it's really important to be considering value for money. And then thinking in this world about what's the research that particularly would be best done here inside the FCA or in partnership with, with academics versus perhaps questions that we could expect reasonable answers to emerge from in the wider ecosystem and benefit from. And that's one of the many reasons it's very important to be in contact with the wider ecosystem.

And then another point I'd make about prioritisation is just about the two, I think it's important here with research to take a portfolio perspective and think of the portfolio of research overall. So, that's something we do. We need some balance across that to make sure that we're supporting the FCA's work and strategic agenda well. We need, for instance, a mix of some faster turnaround insights to support on live issues as well as research that is deeper and a bit more forward looking to be proactive and efficient, effective in the future. We need to be supporting the FCA's strategic priorities across the board and not index heavily on one and not paying enough attention to the other so, that's a lens on things. And we need to be involved in the different phases of the regulatory work. You know, from the upfront thought leadership and horizon scanning right through to hey, we did something, what was the impact of that? Let's monitor and evaluate that. And like I say, there's also that step back. Can we learn about new methodologies and techniques for the future? We might not be able to capture the prize today, but it will be an investment that pays off in the future. So, we need a balance across all of that. And inevitably, when you step back from that, then you see that there are a lot of research questions that you're not able to prioritise immediately. And then it's important not to lose any really good ideas that have been generated. And so, on an ongoing basis, we capture promising ideas in a bit of a car park and look to return to these or perhaps collaborate with academics to tackle them where we can.

OI: And you spoke about Financial Lives, and you've mentioned impact. Can you talk a bit more about that and the way your work supports the outcomes the regulator is looking for?

KC: Yes, absolutely. I'll mention a few a few different areas of work and a few examples because we have some really interesting areas of research related to digital markets. Recent years have seen a strong rise in digitisation in many markets, including financial services. Developments are changing the way that consumers make decisions and the way that the markets operate. So, to be effective and continue to be effective as a regulator, we need to be understanding how these technologies are changing markets and make sure that the benefits are really captured and any harms that come along or could come along or mitigated. It's a priority for the FCA to shape digital markets to ensure good outcomes, and we've set out a commitment around that in our Business Plan, and we have a variety of work as the FCA underway to deliver that and our research programme supports that and plays into that.

To mention one area of work which I think is quite interesting and certainly quite frontier for us. We want digital markets to empower the consumers and an important part of that, not the only part but important part, is ensuring that what you might think of as the digital consumer journey. So, that experience you have when you open up an app and look to buy a financial service or product or check your balance or something like that. But the digital consumer journeys in these markets are designed well and help consumers take active decisions in the best interest. Now, it can surprise people that quite small details sometimes in the design of, if you like, the decision environment, sometimes people call this the choice architecture in behavioural science, can really quite strongly impact consumer outcomes sometimes.

So, what do I mean by that? Firms may introduce perhaps inadvertently, perhaps deliberately, but may introduce some features or frictions into the digital journey for the consumer that may hinder them or prevent them making a good decision for themselves. And perhaps because of the way that those features interact with our cognitive limitations and behavioural biases, which we all have. For instance, a firm may fail to clearly signpost the process for cancelling a product. So, you're there on the website or in the app, and you're finding it very hard to take that action for yourself. But it would be the right action. And so, you're struggling to switch. This would be an example of what we sometimes call, and there's a bit of a literature around this in behavioural science, sludge. You may have heard of sludge. You may have heard of nudge or nudging, it's very related but it's about features or elements of a journey that may tip consumers towards a particular action and to sort of, you know, remove barriers if you like, to a particular action through small tweaks to the decision environment.

There's been a lot of focus on nudge over the years and quite a bit of our work on the behavioural science side has looked at these two. Like nudging, introducing sludge can be good or bad for consumers actually. So, it all depends on the context and what would be in the consumer's best interest. The effects of this can be quite subtle. Some frictions such as a cooling off period or a fraud check, a net can help protect consumers and particularly more vulnerable consumers, perhaps so influencing the consumer decisions. It requires a careful look and some forensic empirical work really to understand what is in the best interest of the consumers and think about our role then as a regulator in ensuring that the environment and the condition is set up well and that firms understand our expectations there.

Influencing consumer decisions through behavioural science, you know, inadvertently or sort of deliberately. It's not really a new thing or it's certainly not all new. But I would say that with the rise in digital, big data and algorithms, the scope for harm, if you like, is expanding and somewhat mutating. Some firms today will be using A/B testing to optimise a user interface design and then quickly deploy new features at scale. So, this poses risks of harm if the changes wouldn't be in the right interests for consumers.

At the same time, of course, it means there's a lot of power in that work. There's great scope there to harness all of the science and the ability to deploy things rapidly at scale in the consumer interest and really empower them through a really strong, good journey design. So, there's quite a lot at stake. In some of our recent research we've looked at the high-cost credit market and we found that over 70% of high cost credit web pages contained harmful sludge practices. In some other recent research, we investigated potentially harmful sludge and gamification in retail trading apps. There our analysis raised some concerns that the consumers using these apps were exposed to quite high-risk investments in ways that might not lead them to very good outcomes.

We found some evidence that some users exhibit behaviours that are similar in various ways to problem gambling, and we've published some of the insight from our research recently. Gamification and other digital design features could be used also to engage consumers positively and support them. So again, it requires a careful look and there is a need to be quite careful about jumping to conclusions. And actually, you know, these are empirical questions.

So, how are we having an impact? You asked about impact, how are we having an impact through this research? It's obviously an ongoing programme for us, but supported by our research the FCA's highlighted sludge practices in our new Consumer Duty. We've set out our expectations of firms there around this. We've opened supervisory cases against relevant high-cost credit lenders and as an organisation we're taking steps to follow up with some of the providers involved in our trading apps research as well. As I mentioned, though, as I say, not all sludge or nudges is harmful. Sometimes the frictions can help. So, it's about nuanced behavioural science work, not necessary all happening here inside the FCA, but I think this is the opportunity when you think about the future and really getting things right for consumers with journey design.

OI: How do you keep on top of all the areas within financial services? Because obviously digital markets are huge.

KC: Yeah, so digital markets are vast. And actually, you know what I'll tell you in a moment is that actually the when the lens is much wider than that because it isn't just on the design of the digital journey and as you say, that's cross-cutting across all the sectors. So, we use some exploratory work to identify issues, I think it wouldn't be realistic to be selling yourself the goal through some research to say everything about everything to do with digital consumer journey design. So, we're trying to be quite targeted in our own forensic work and we are looking to help firms understand our expectations of them through the Consumer Duty and then support them to, you know, for instance, use their own testing and their own understanding of their journey design to ensure that consumers get good outcomes. And we're spotlighting some of the issues that could arise through some of our research. So, that's one way to think about one of the functions that the research plays.

In the digital space as well and slightly more, more widely, we have been doing some research looking at potential harms and benefits from the use of algorithms and artificial intelligence. There again, you know, we have, you could look at many, many different things.

We have gone after some initial investigations of some of the areas where concerns may have arisen in the academic literature or from some initial exploratory work. Recently, we've looked at issues like algorithmic bias and unfairness, which, you know are often the subject of focus when you get people together to talk about AI and AI ethics and what difference this is ultimately going to make to people's lives and the accountability we're looking for. The use of machine learning as an input into decision making is growing because it has an ability to uncover hidden patterns in large data and improve the prediction accuracy. But questions have been raised about the potential distributional impacts.

So, one concern is that when you get a very powerful prediction technology, slightly black box, complex technology like this apply to rich, large scale consumer data. There could be biases in the data, human biases from past decisions and an approach like that could perpetuate or even amplify these biases. So, this whole world is sometimes called algorithmic bias or algorithmic fairness concerns. And recently we've published some research utilising some very large-scale rich credit file data on about 800,000 borrowers to simulate what happens to accuracy and statistical fairness of the credit scores when you switch from a very traditional statistical model to a more complex machine learning model, taking some of the opportunities that exist now with processing power and machine learning techniques. And we've also looked at some issues around explainability and transparency for these models. How are we using all of this? Because that's just one example. Well, our conceptual and empirical work there is informing our thinking and our regulatory approach in this space. But we are developing our own approach, regulatory approach to algorithms and the use of AI and doing some of that in partnership with the Bank of England, for instance. We're also collaborating a lot with the Digital Regulation Cooperation Forum, which brings together some of our peer regulators to focus on digital issues. So, we could perhaps talk about that a little bit later on.

But another area, a couple of more areas just to mention, we again, under digital markets, we're very focussed on supporting competition and innovation as these markets digitise. There's a huge opportunity to do this. In some of our research, we've been exploring some of the potential benefits and harms from digital platforms, platform business models, which we've seen increasingly making greater use of big data and automation to bring together customers and providers of financial products and services. And we know that these models can change market structure, but the effects of that and the impact of that are less well understood. And recently in some of our research, including some joint work with researchers at the Bank for International Settlements and with Tommaso Valletti at Imperial, we've assessed how these models can affect market structure and policy objectives like financial inclusion, consumer protection, competition and financial stability. We've got some really interesting proactive work underway at the FCA on big data, big tech entry in financial services. We recently published some of our research in a discussion paper looking at the competition, risks and benefits of big tech entry in the markets we regulate.

What is the way to think about this? Well, one way to think about this is that when big tech enters financial services, you could see a lot of benefits for consumers because they can combine existing large-scale businesses with financial services and maybe offer increased innovation, reduced costs, potentially improve access to products and services, including for some who may have been underserved or even unserved by traditional firms. But then in the longer term, there are concerns that there could be competition risks if big tech firms gain market share rapidly, if they're able to exploit market power. Two factors that will be how they exploit those ecosystems, including the data, the consumer data that's amassed and the ecosystems there. Now, these are big issues and there are myriad questions around this. But just to start off that discussion, we've put out a paper, it includes some research and analysis focusing on potential impacts for competition in four sectors.

Payments, deposit taking, consumer credit and insurance. We really want to stimulate further thinking out there and engagement and use this to inform our regulatory approach.

So that's a lot about just digital markets. The FCA has a very, very wide remit and we have strategic priorities that span a much larger space as well. And we've got research that supports many elements of that. So, some of our behavioural, to mention just very briefly, a few more examples to give a sense of the scope. Some of our behavioural scientists have been involved in empirical research on sustainability questions, supporting our ESG agenda, partnering closely with the ESG team there, with my colleague Sasha Sadan and the team there, and designing behaviourally informed sustainability factsheets and consumer disclosures for retail investors, and then using that research to inform the policy development in the space. We have a lot of research over the years that we have used on wholesale markets to support the FCA's agenda and strategic priorities there.

The FCA is looking for the UK wholesale market to really be supporting the domestic economy and growth and be open to innovation, but obviously underpinned by very high standards of market integrity and consumer protection. And we've used research on the microstructure of securities markets, which is a field within academia, academia and academic research. A few of us have some background in that, and we often work with leading academics in that space. We've been using a range of research approaches and techniques to inform our policy work and also to help us do things like monitor liquidity and market functioning during the pandemic and through other times of stress. So, that's another interesting example. We've been using what you might think of macro to micro research techniques to, on the one hand take macro-economic developments which currently in recent years and currently still are very challenging and look at how they could impact consumers and firms in the markets that we regulate. And we've been using that kind of approach with some modelling to support that and some data work to inform and support our Covid response, to get support to consumers there. We're currently leveraging some of the same approaches and building on these to model the impact of the cost of living and some of the challenges there and inform our regulatory work in that area.

And then just to round up, you know, again, I come back to this point about once we've done something, the journey and the role for research as a complement to the FCA's wider work doesn't really stop because it's very important to track and monitor the outcomes and then really evaluate the impact of what we did. And so we've got strands of our research that are focussed on very rigorous impact evaluation using techniques in causal inference and, you know, examples there include some of the policy, what we did in general insurance and looking at the impact there. We've been using research to improve our methodologies and explore new techniques and toolkits. And there some examples include some of the work we've been doing to push the envelope a little bit on techniques that could support a really good rigorous cost benefit analysis.

OI: And your team published a paper on robo advice in 2022 and that examined the potential improvements to borrower repayment decisions. Is that right? Can you tell me a bit about those findings?

KC: Yes. So, this was a really interesting piece of research. We worked with 3 academic collaborators from the US, from Boston College and Georgetown University. Together with them, we looked at opportunities for algorithms to support consumer decision making in the context of borrower repayment decisions. Just before I tell you about that specific piece of research, I just want to make a few wider points about robo advice and our interest there. So, the step back reflection on this is that financial decisions are very important for all of us, but they're very, they're very hard decisions often, they're complex. People can be quite challenged. We can all be quite challenged with financial literacy. We can all have our cognitive biases and limitations. So this is a difficult space for consumer decision making generally. And it's really interesting to think about an opportunity like algorithmic advice, particularly as we go forward and, you know, some of the costs of that continue to fall. But really, in very basic terms, this is about harnessing, for instance, data and technology to support people in their decision making.

So, it may well be that, you know, you could take a decision on how to repay your loans by yourself or which mortgage to switch into. Or perhaps you could open up an app and get a few prompts and suggestions where behind, sitting behind that is an algorithm that is running, you know, running some assessment of what might be in your best interest, based on what it knows about you, some wider data about the market and the options out there and giving you some support for that decision in the moment. So, it's that kind of thought experiment and possibility. So, sometimes people refer to this world as robo advice or this opportunity is robo advice, and it could be available, you could go to a human financial advisor, but there are only so many human financial advisors in the world, and there are a lot of people out there needing to take financial decisions. So, this is not necessarily a complete, completely to be seen as a replacement for that. But many decisions are going unsupported in that sense, and this could be a relatively cheap, fast maybe even 24/7 tool that could be available for consumers for some of their financial decision making.

But then as we started to look at this, there are clearly also some potential challenges or possible inhibitors when you think about both the demand side and the supply side. So how do you make sure that a tool like this really supports consumers? Well, including not just the average consumer, but also thinking about more complex cases or aspects of vulnerability and really making sure that the advice and recommendation would be appropriate. How, on the demand side, how much confidence would you have that consumers would really trust and adopt algorithmic advice? You know, there is a bit of a literature on something called algorithm aversion. And, you know, they're one of the insights, although I should say, that there are some results that run the other way. But they're some of the insights or that on occasion, in some circumstances, people, all other things equal, people seem a little bit unsure whether to trust advice when they know that it's been generated by an algorithm and a technology rather than, say, sitting down with a human advisor or a friend or a relative.

And so, this is a very nascent area for research. I think there's a lot of evidence gaps around this. Two years ago, we, or a few years ago, we ran a few online experiments to look at consumer attitudes towards robo advice and investments, which has been the more focal use case where we've seen some development and activity in the markets. In some of our recent research with these 3 academics, what we wanted to do was actually open up an entirely new space and ask ourselves, what is the scope for robo advice or something along those lines to support borrowers and people not investing, but perhaps struggling with their debt repayment decisions. And when you think about the debt advice that people could access today, there is debt advice, but it's typically designed to help consumers when they're already in quite serious difficulty. And we were interested in whether we could think about some support more upstream of that. Is there some automated advice that could help prevent some of the people out there, some of us getting into poor decisions early on that then later on could have grown and compounded and lead to some quite serious difficulties of getting upstream of some of that potential harm.

So, together with our academic collaborators, we designed and ran some randomised controlled trials. We put people - I should stress it was hypothetical debt repayment scenarios - but designed to be relatively realistic. We put people into these scenarios and we had them take some decisions, you know, with or without the benefit of some algorithmic support. But we also looked at their attitudes towards that. Who would really trust that advice and adopt and embrace it and who might be more reticent? So, what did we find there? We found that firstly, we found that mistakes are really common when people take repayment decisions without support. So, if you like, that's a bit of a baseline. We actually found that 2 thirds of the people in our experiments were making quite costly errors without any support for their decisions. And then when you introduced this option of free robo advice, what we saw is that for those people that accepted that offer, this really improved their decision significantly. They ended up leaving almost no money on the table versus the baseline decisions that people were taking. And particularly those with lower financial literacy and numeracy seemed to especially benefit.

About a quarter of the participants though. And I think this again, quite interesting coming back to the point about algorithm aversion, they refused the offer of free robo advice and went on to make mistakes. So that's interesting. I personally think that's pause for thought and some of the some of the questions that arise there is, you know, what could explain the low trust or the low inclination among that group of people, which is a non-trivial, you know, part of the of the group to adopt the algorithmic advice is, to what extent is there algorithm aversion and what might we take from that and how might you move forward. And like I say, more research is needed on this. It connects to itself what is a very nascent literature in academia on this kind of topic. A couple of the other insights from that research that were quite interesting. We found that there was no obvious consumer learning from using the tool. So, you might think you use a tool like this and you just kind of grow. You know, when I use it, I grow smarter and smarter as I use the tool just by sort of observing the advice that I'm given and the way the way I interact there helps educate me in a way. And we found that even when we bundle the tool with some educational tips, we don't really see any obvious consumer learning.

And so this needs unpacking a bit. And, you know, it wasn't the definitive study of this, but it was an interesting insight. But I think this may speak for, or we think this may speak for some support in the future being offered on a more just in time basis to support consumers in the moment, possibly as a complement to wider education. But it's interesting to think about the tool in that context. And then finally, individuals, we did ask them about their willingness to pay for the tool, and some individuals were reporting being willing to pay more for the tool than its monetary benefit to them in these hypothetical scenarios. Obviously, like I say, it's not the definitive story and study, but potentially this does suggest a mental cost, perhaps a significant mental cost when people are out there day to day juggling these debts and needing to make repayment decisions. And this actually links to an important set of findings in behavioural science research recently related to what is called mental scarcity. So, just this idea that when you're maxed out with, you know, some of these decisions and you're perhaps in a vulnerable situation, you could be really struggling and experiencing some real mental cost to the decision making and perhaps taking poorer decisions.

So, we think this is really interesting. We don't have the final word on it in our own research, but we think it's a fertile area to explore when you think about data and technology and all of those decisions that we're all out there making every day. And it's particularly sobering to think about this, of course, in the context of our cost-of-living challenges.

OI: Yeah, I can imagine. And if we go back to robo advice, what does it mean for human financial advice and advisors?

KC: Well, it's a really interesting question. It's an open question, I think. But it doesn't necessarily mean the end of human financial advice by a long way. Robo advice could be a very good complement to certain forms of human financial advice or human advice more generally, because you could have robo advice in other sectors and contexts of life as well. It could potentially help fill in this particular setting an existing gap for many consumers because, as I mentioned, there are a lot of decisions being taken every day without any particular professional advice or support. So, people might be taking decisions under their own steam or consulting friends or a family member, occasionally going to a human financial advisor, some people sometimes. So, that's really the picture and the backdrop here. And I think in that context, it's actually really interesting and exciting to think about technology and some broader access that might be available to some form of, you know, good financial advice in the future.

OI: And what follows the findings from this research then?

KC: Well, we're exploring the potential next steps at the moment and possibly some further work. We'd like to understand better the drivers of consumer trust in this setting and that adoption take up that I talked about for tools like this. We're really focussed on practical impact, so we're keen to explore what it would take to get there with this and to, you know, what would it take to see solutions along the lines that we tested, which needs some refinement and adaptation for the real world, of course. What would it take to see those implemented successfully in the market? So, we're considering further work and in various discussions around that and what it might take to test that out further and support the practical implementation.

I should say, because we're on a podcast, that we do welcome interest and discussions from anyone out there who might be listening to this, be interested in exploring work, potentially some joint work with us in this area, building on some of the insights of the research.

OI: And what about other projects? Can you talk about what we can expect to see in the future from your team?

KC: Well, we have a range of ongoing and upcoming work linked to different areas of the FCA's live regulatory work. For instance, some of our research is aimed at informing policy interventions in the wholesale markets. After the Government's wholesale markets review, we've got a very active programme of research informing the support for consumers during the cost of living challenges. For instance, a macro to micro approach that I described there. We've been looking at the impact on consumers of rising interest rates and some of the wider cost of living challenges and using that to inform our regulatory work and support in the space. And this will continue to be important for some time. I think we combine a range of insight and intelligence and then some modelling approaches to bring that together. So, for instance, we take external macro forecasts, and we combine that with some of our micro economic analysis, leveraging some of our large-scale regulatory datasets and other data sources to get to some timely insights in that area and actively monitor developments.

And it's a programme that we're always looking to support with, but also to improve over time. We're quite agile around that.

There are some really interesting opportunities at the intersection of economics and data science and more broadly the social sciences and data science, what you might think of as, and people sometimes called social data science. A while ago we set up an integrated economic behavioural science and data science function, and that was something I was very keen to do at the FCA. And some of the research that we're working on there includes some further work on algorithmic harms and benefits that I mentioned and further work on online choice architecture, those digital journeys and some of the issues that can arise there with sludge or sometimes people call them dark patterns. There's a really big space there and we're identifying and addressing harms that I think can make a big practical difference to people on a day-to-day basis. Sometimes in quite low-cost ways. We are planning to do some further analysis on the trading apps I mentioned and the use there of design features. We're keen to understand wider vulnerabilities for users of the app.

So, are people borrowing to invest on those apps? And then is that leading to harm? What's the scale in the nature of the losses there and the problems people might be experiencing? And then how does all of that link to the design of the consumer journey and the kinds of features that we are starting to investigate there? And how are they supporting people to either get good decisions or perhaps invest beyond their risk appetite and their situation. And crypto, I won't say too much about it, but crypto is a related area of focus for us there. Some of the research then, just to finish, will be focused on advancing our own capabilities. You know, I mentioned looking around corners for issues but also looking ahead at the toolkits we'll need in the future and trying to get ahead of that today and stay at the cutting edge.

Big data and AI and those kinds of techniques, they allow some new approaches to market analysis. That's really exciting and it can help us better understand the impact of our policies, potentially design more appropriate interventions.

A few quite promising areas there that we're interested in exploring further are, you know, how can you use machine learning to predict outcomes perhaps before they happen, such as credit default or financial distress? And then what would be the opportunity there to support consumers better? Could you use some of the tools in the machine learning tool kit to enhance causal estimation in ways that could help policy design? So there's some academic work on that aspect of things and we're connected to that and interested. And we are interested in exploring techniques to estimate what you might think of as the differential or the heterogeneous policy impacts of our interventions. So, the same intervention can have a different impact on different individuals, right? So, we've seen in lots of different experiments that a particular nudge, perhaps to support a financial decision or another decision, can work one way for one individual and be really effective and the same nudge may fall flat a little bit for another individual. It may even have a counterproductive impact.

So, there's this heterogeneity and this variation in consumers. And that's really, not only interesting to understand, but I think what is important to understand when we want to have, when we want to maximise the impact of our work in terms of helping people's good outcomes. We might in the future, through some of that research, be able to target policy, not at an average consumer, but to groups of consumers or even individuals in the future using and integrating this combination of behavioural science, data science, economics, design, technology.

OI: And finally, you've already spoken about the variety of work for economists, behavioural scientists, data scientists at the FCA. Can you share any advice for anyone out there thinking about a career in this area?

KC: Yes, I would really encourage anyone out there interested in research to really focus as much as they possibly can on the kinds of questions that get them up in the morning, if you like, that really captivate them and fascinate them. And then on developing their skills for research through that. It's hard to say exactly what opportunities there will be in the future, certainly the far flung future. And we're all learning every day. We're going to need people, I think, societally, who can just think really well about problems and bring expertise in relevant areas. There's been a lot of focus in recent years on skills in data analysis, and this is certainly something that's very important for evidence-based decisions across organisations, including ours. But then at the same time, you know, as that technology advances, actually the social sciences and the humanities are becoming, in my view, more important, not less. And there'll be certainly meaningful work for people who can bring some valuable training in those areas too. And I think across all of that, there'll be a real premium actually for people who can bring training from one of many disciplines and fields relevant for complex problems like complex societal problems, but also really integrate well across disciplines, really work well as a team across disciplines. This is something I see very much in our day to day work, and I personally find very exciting as well as very challenging.

OI: And Karen, what would a prospective candidate gain from a career in research at the FCA?

KC: A lot, I think, but I'm very biased. So, in terms of potential careers with us at the FCA in this area, we have a really incredible mission, a huge responsibility. We need some excellent minds and excellent problem solvers, excellent learners to work on this with us. We're always looking for people who can work well as part of an interdisciplinary team and don't get fazed by what are sometimes quite ambiguous problem solving situations and challenges. We work in a very applied way, so we really focus on practical problems and real world impact. I hope that came through in some of the examples that I shared there. There are many more as well. And so, there's really a chance day to day at the FCA to make a positive difference to the lives of millions of consumers ultimately and ensure that markets are functioning well for all of us. Our researchers and analysts they come from quite an interesting range of backgrounds. We always welcome interest from people keen to have an impact and keen to learn, grow and develop.

OI: Thanks for your time today, Karen, and for the unique insight you've provided. There's more information, including research reports on the FCA website. I'm Ozge Ibrahim, join us again soon on the Inside FCA podcast.