



CENTRE FOR DATA ETHICS AND INNOVATION: REVIEW ON BIAS IN ALGORITHMIC DECISION MAKING

Issued 14 June 2019

ICAEW welcomes the opportunity to comment on the call for evidence on the CDEI review on bias in algorithmic decision making published by Centre for Data Ethics and Innovation on 7 May 2019, a copy of which is available from this [link](#).

This response relates to the financial services review and is based on ICAEW's work on the ethical use of big data in financial services which includes **case studies**, **principles for firms** and **advice for consumers**. This response focusses on the questions where ICAEW has specifically considered the issues being raised and where we are able to draw on our research and experience of our members.

This response of 14 June 2019 has been prepared by the ICAEW Financial Services Faculty. As a leading centre for thought leadership on financial services, the Faculty brings together different interests and is responsible for representations on behalf of ICAEW on governance, regulation, risk management, auditing and reporting issues facing the financial services sector. The Faculty draws on the expertise of its members and more than 25,000 ICAEW members involved in financial services.

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ANSWERS TO SPECIFIC QUESTIONS

1.6 What are the key ethical concerns with the increased use of algorithms in making decisions about people?

1. Financial services fulfil vital social functions, allowing individuals and businesses to store value, make payments, manage risk and invest for the future. Access to and pricing of these services is built on assessing the risk individuals present and their circumstances (why different individuals are charged different rates of interest or different insurance premiums).
2. The use of algorithms in making decisions about people's access to financial services and their cost means how this discrimination works may be less transparent and how firms are accountable is less clear. The increasing use of non-traditional data, big data and the new ways businesses are able to use legacy data in underwriting also amplifies the risk.
3. In our Principles for the ethical use of big data in financial services we state that "Bringing big data and algorithms into the decision making process increases the potential for harm. Discrimination on the basis of protected characteristics or uncontrollable factors which are explicitly or implicitly captured in the data used may occur illegally or unfairly."

2.2 At what point is the process at highest risk of introducing bias? For example, in the data used to train the algorithm, the design of the algorithm, or the way a human responds to the algorithm's output.

4. All aspects of algorithm use have potential to introduce or perpetuate bias including use of new data, new uses of existing/historic data already held by financial institutions, the design of the algorithm, the design of processes and controls around algorithm use (see the Prudential Regulation Authority's supervisory statement on algorithmic trading for discussion of some similar issues around algorithm governance which may be instructive in this area <https://www.bankofengland.co.uk/prudential-regulation/publication/2018/algorithmic-trading-ss>).
5. The relative level of risk will vary institution to institution and product to product depending on a variety of factors including data quality, risk appetite, skills and experience of the three lines of defence and the culture of the firm.

2.3 Assuming this bias is occurring or at risk of occurring in the future, what is being done to mitigate it? And who should be leading efforts to do this?

6. Prevention of and mitigation of bias occurring is a collective responsibility of firms, regulators and governments and citizens. However, financial services businesses have a regulatory duty and social contract to treat customers fairly and provide access to products and services.

3.1 What are the best ways to engage with the public and gain their buy in before deploying the use of algorithms in decision making? For example, should a loan applicant be told that an algorithm is being used to assess their loan application?

7. Public understanding of and engagement with financial services is generally low. The increasing volume of debate around technology, data and privacy as it continues to further encroach on our day to day lives and how we do businesses represents an opportunity to raise awareness of how and why algorithmic decision making is used.
8. In our principles we suggest that firms must make IT systems fit for purpose so customers can control their data. Making this work will need education about informed consent, what

data individuals consent to the company holding and how that data might reveal more about an individual than they realise, or be used for unforeseen purposes.

9. In particular with essential services, it can be hard for consumer to genuinely opt-out – for example “you don’t have to be assessed by an algorithm but it will cost twice as much to be assessed by a human” isn’t a genuine free choice.

Create feedback mechanisms

10. Customers need to understand what options they have in the event of an adverse big data decision (being denied insurance coverage, access to credit, or an unfavourable change in terms and conditions) against them. If the criteria for decision making are sensible and objective, customers may also struggle to access financial services elsewhere.
11. Businesses need to be able to let the customer know why the decision was made, and the relevant criteria. The customer can assess whether the information is accurate or not, and offer correction. Feedback mechanisms exist with credit referencing agencies where people can provide additional data or ask for data to be corrected to improve their credit score.

Create a customer data dashboard

12. A data dashboard could help institutions achieve fit for purpose IT systems. This would require a single customer view, which many institutions are working toward. Where data is held as part of an aggregated population, or derived from proxies, firms should provide a clear explanation to customers, and inform them of their options should they want to update or change data, seek recourse or complain.

4.1 What are the gaps in regulation of the use of algorithms?

13. Outcome based financial services regulation is well placed to address the tensions created by the increasing use of big data and algorithms, with fundamental concepts of accountability and treating customers fairly, regardless of the basis of decision making. All financial services firms must be able to show consistently that fair treatment of customers is at the heart of their business model. As business models change with the increasing use of big data, firms will have to critically assess how they understand fairness, and how to keep customers at the centre of business.
14. We see a gap in the skills and experience to take responsibility for big data and algorithms, and the industry lacks “unicorns” individuals who can understand the science and statistics, as well as explain outcomes simply and clearly.

4.2 Are there particular improvements needed to existing regulatory arrangements to address the risk of unfair discrimination as a result of decisions being made by algorithms?

15. Financial services regulators have made clear that senior management are responsible for unfair discrimination as a result of decision making by algorithms, but policy and rules in this area are still evolving. Chief Data Officer (CDO) or equivalent should become a Senior Management Function under the **Senior Managers and Certification Regime** and equivalent regimes around the globe, to ensure clear accountability within firms and with regulators.
16. CDOs should ensure boards and companies have the appropriate skills and knowledge to support their use of big data and algorithms. The level of knowledge boards need, and what processes they are able to rely on, is a matter for debate, but there needs to be a reliable interpretation of results by a trusted communicator. Where there is a skills lag or gap between the first and third lines of defence, this should be monitored and remedied.