Response to the consultation invitation on "Algorithms: How they can reduce competition and harm consumers" from the Competition and Markets Authority.

On behalf of Professor Nik Lomax and Dr Stephen Clark, University of Leeds, LEEDS, LS2 9JT

We thank the Authority for an opportunity to comment on their recent consultation on algorithms and their role in shaping markets and potentially distorting markets, to the detriment of consumers.

Whilst the document rightly concentrates on these harms and how they may disadvantage certain sections of society we believe that algorithms also have to potential to protect consumers, particularly those who may be viewed as vulnerable. This sentiment is covered to a degree in sections 1.4 and 1.5 that highlight how algorithms have been beneficial for consumers, but we believe that algorithms can be used to mitigate potential harms. This begins to come close to your desire in section 4.17 where you express an interest "… in the design and use of relevant software that can help consumers to protect themselves …"

We believe that our response fits in with your questions regarding:

4. *Are there specific examples that we should investigate further to consider whether they are particularly harmful and potentially breaching consumer or competition law?*
5. *Are there any examples of techniques that we should be aware of or that we should consider beyond those that we've outlined?*

For our contribution, we wish to introduce you to a study where we have created an area based classification for the United Kingdom. This classification differentiates local neighbourhoods by their potential to contain consumers who may be vulnerable to some form of harm from certain marketing practices. Our motivation was the distressing case of Mrs Olive Cooke, who, it is reported in the press, was "hounded" by charitable organisations in the months and years up until her tragic suicide.

Our classification was derived using information on local neighbourhoods, typically containing 125 households, provided by the 2011 Census. The choice of variables to use was informed by a study on the literature on various forms of marketing harm. These variables came from the domains of: age, living arrangements, housing, health, education, mobility and proficiency in English. Using the commonly applied un-supervised leaning algorithmic technique of k-means we were able to identify six classes of neighbourhoods: Prosperous Professionals; Well Established; Students and Young Professionals; On a Budget; On a Budget; and Vulnerable Pensioners. These classes were further validated using an external commercial data source.

The output of the research are under consideration for publication and are available for use now, as illustrated by this interactive map :
https://maps.cdrc.ac.uk/#/geodemographics/vulnerability/default/BTTTFFT/10/-

0.1500/51.5200/ . The product is also marketed by a collaborator on our project : https://readgroup.co.uk/services/quality-data/consumer-vulnerability-score-model/

We feel that resources such as ours allows marketing organisations, not just charities, to better tailor their marketing material to areas, using nothing more sophisticated than a postcode in order to reduce the potential from harm and protect their reputation. There is also the potential for governments and local authorities to target educational material to communities in order to alter them to be aware of certain marketing practices that pray on certain sections of society.

Notes:

A brief summary of the interest or organisation that you represent, where appropriate. We are both employed by the University of Leeds in varying capacities. Dr Lomax is an Associate Professor of Data Analytics for Population Research. He is also a fellow at the Turing Institute for data science and artificial intelligence and co-Director of the ESRC funded Consumer Data Research Centre. Dr Clark is a Research Fellow within the Consumer Data Research Centre and has an interest in the analysis of novel data sets from the domains of health, housing, politics and transport.

State whether you are providing any material that you consider to be confidential and explain why this is the case. None of the material provided here is considered to be confidential.

Provide both confidential version and a non-confidential version for publication of your response. NA.

We are interested in collaborating with your algorithms programme and may be contacted via : N.M.Lomax@leeds.ac.uk or tra6sdc@leeds.ack (Stephen Clark)