

# DOES DELIBERATION CHANGE PEOPLE'S POSITION ON AIRPORT EXPANSION?

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## 1. INTRODUCTION

However well intentioned, the Airports Commission's consultation document (Airports Commission 2014) demands a considerable amount of the respondent, as acknowledged by the Commission itself: "A great deal of material was published for consultation - a reflection of the complexity of the task that the Commission is engaged in - and challenging questions were put to the public" (Airports Commission 2015). This makes the fact that 68,000 responses have been received all the more impressive.

It may be argued that the Commission's goal was not to educate people concerning its task but to provide those who had an existing interest with the necessary information and materials to make an informed contribution. But the fact that 63,000 submissions were what the Commission calls "campaign responses" (Airports Commission 2015) may tell a story: if responding to its consultation is so onerous, it is hardly surprising that many took the short-cut of using ready-made text to put their views. In fact, it would hardly seem socially useful for thousands of people to devote the hours necessary to reviewing the materials and producing a personally drafted response. The Commission consequently has the task of weighing these generic responses against the purpose-written contributions of citizens and organisations.

There is a perennial trade-off between depth and numbers in citizen participation: the more a given participant weighs the options, arguments and evidence, the more considered and robust her views will become. A superficial consideration will lead to a more superficial set of conclusions though it places a smaller burden on the participant and therefore more people can be expected to follow this path. But only so many people have the time and inclination to participate at all, let alone in depth. There is therefore an argument for developing participation methods that are designed to enable "speedy deliberation", by using evidence selectively and organising it in ways that are easily assimilated.

This paper describes the use of an on-line argument map (Open up UK undated) to do this, providing a mechanism for participants to weigh some of the main arguments relating to airport expansion quickly within a structure designed to minimise bias. The method is intended to be deliberative, on the

basis that most questions of policy have complexity and that an unreflective response may not represent an individual's true preferences.

## **2. AIRPORT EXPANSION: GENERAL HISTORY AND BACKGROUND ON AIRPORTS COMMISSION**

### **2.1 Airport expansion around London**

Debate concerning airport capacity in the South East is nothing new. In the 1960s, the Roskill Commission attracted great attention as it tried to work out where a third London airport should go. Its recommendation of Cublington was ultimately rejected. There followed decades of proposals (including various ideas involving the Thames estuary), white papers and government undertakings.

Most recently, in its programme for government, in 2010 the coalition government ruled out expansion at Heathrow, Gatwick and Stansted. But this decision was immediately attacked, on grounds of growth in demand for aviation and projections that suggested it will continue.

### **2.2 The Airports Commission**

The Airports Commission was set up in September 2012 "to identify and recommend...options for maintaining the UK's status as an international hub for aviation" (Airports Commission 2013, p.16). It is expected to publish its findings and recommendations this summer.

The Commission published an interim report in December 2013 (Airports Commission 2013). This explained the way airports had adapted to increased demand and how efficiencies and technological advances have increased capacity. The report also forecast that all of London's airports will be operating at capacity by 2041.

The interim report short-listed three options for adding to the runway capacity at London's airports: two options at Heathrow (a third runway and the extension of an existing runway enabling it to operate as two runways) and a second runway at Gatwick. The Commission also indicated that there was likely to be a demand case for a second additional runway by 2050.

The Airports Commission did not include in its short-list the Thames Estuary Airport options such as that championed by London Mayor Boris Johnson; after additional analysis, the Commission ruled the idea out entirely, citing cost and negative environmental impacts as the principal reasons.

### **2.3 Discussion**

It is easy to characterise the aviation debate as being economy (in favour of expansion) versus environment (against expansion) but this is simplistic. The pro-expansion position includes a civil liberties element and reflects arguments about both the economies immediately surrounding airports and the UK economy as a whole. Those who oppose expansion often talk about

climate change but also raise a range of arguments relating to local environment and quality of life, including both the effect of new construction on homes, biodiversity etc and the noise impact of additional flights.

It is important to note that the Commission’s terms of reference require it to pursue a particular outcome - the maintenance of the UK’s dominance in European aviation - which naturally influences the way it has approached its work and the appraisal framework it is using to consider options.

Moreover, there is more than one kind of airport: much of the current lobbying by Heathrow and Gatwick is driven by arguments that favour either **hub-type** provision (connecting a great number of directions by facilitating easy interchange) or **point-to-point** provision (where South-East England is either the origin or destination of the vast majority of trips made by plane).

### 3. ARGUMENT MAPS AND HOW OPEN UP WORKS

#### 3.1 Argument maps

Argument maps are visualisations of arguments, intended to tease out complexity and enable the relationships between claims, evidence and inference to be clearly seen (see Figure 1).

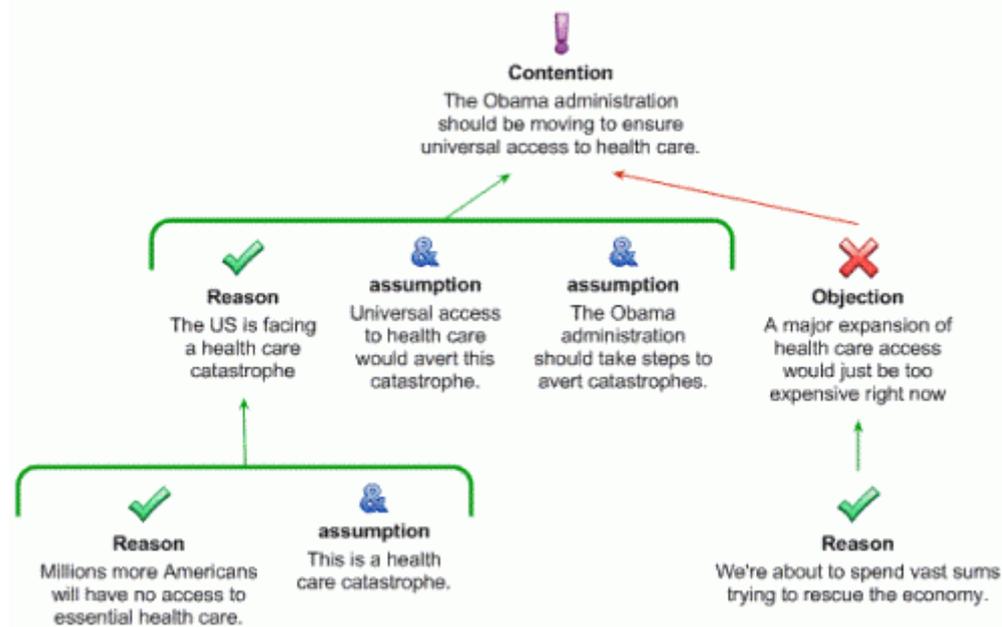


Figure 1 - Example argument map (from van Gelder 2009)

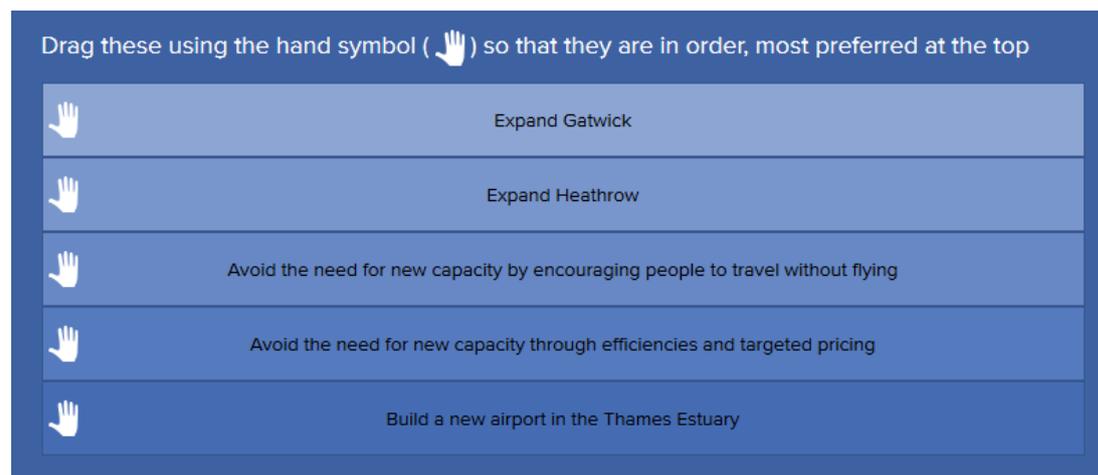
On-line argument maps are becoming increasingly common and they do not necessarily resemble their printed forebears given the capacity for interaction between the viewer and the material, but the applications are similar. According to van Gelder (2009), an argument map can promote clarity and insight, can help users to understand how arguments are constructed and can be “an effective way to improve general critical thinking skills”. In order to work well, it is important that the map be as free of bias as possible: “The

better an argument map is, the more unbiased and neutral it is.” (Argunet 2013)

Perry Walker (who established Open Up) has more specific aims for the argument maps on his website: “I developed the site because existing media don’t help me work out what I think about the issues of the day. That’s dangerous” (Open up UK undated). He goes on: “Open Up is designed for people who want to work out what they think about the issues of the day, but who don’t have the time to read lots of material.” So Open Up is intended both to enable users to arrive at their own point of view and to do so relatively speedily.

### 3.2 How Open Up works

The Open Up argument map is built around two components - options and arguments. When the user embarks on a topic, she is presented with a set of options relevant to the topic (eg “avoid the need for new capacity by encouraging people to travel without flying”) and invited to rank them (Figure 2).



**Figure 2 - Open Up: ranking options (Open up UK 2014)**

The second stage involves rating a set of 12 arguments in six opposed pairs relevant to the options. Against each argument (eg “we can manage demand for flying in the South-East by applying a pricing system a bit like London’s congestion charge”) there is a scale with “disagree” on the left and “agree” on the right. The user is invited to move a slider to a point on this scale (which is exported for analysis as an integer between 0 and 100). The 12 arguments are in fact six sets of opposed pairs, though they are not presented in a particular order (Figure 3).

Once she has rated all the arguments, the user is then shown those of the 12 with which she most agreed, and invited to rank these (Figure 4). At this point, the “counter-argument” is revealed as the user “mouses over” each in the list. Finally, she is invited to rank the options a second time (with options presented in a random order). Throughout the process, background

information and explanation are available to assist the user in reaching her decisions.

Rate each argument according to how much you disagree or agree with it.

Pricing would not be effective in managing air travel demand so some alternative would still be necessary.  
[read more](#)

disagree agree

Hub airport capacity is what London is short of. Expansion should be at London's existing hub airport (Heathrow).  
[read more](#)

disagree agree

Expanding Heathrow or Gatwick is just a temporary fix: we need the extra capacity of a new, four-runway, airport.  
[read more](#)

disagree agree

High-speed rail is efficient only for large flows and can only compete with aviation over short distances.  
[read more](#)

Figure 3 - Open Up: scoring arguments (Open up UK 2014)

At the end of the exercise, the user is provided with a digest of her preferences and these are set alongside the average responses of those who have completed the topic. In the case of airport capacity, a set of socio-demographic questions precedes the results page.

Your top arguments

If we don't expand capacity, the UK will lose air traffic to other European airports, which will hurt the UK economy.

Hub airport capacity is what London is short of. Expansion should be at London's existing hub airport (Heathrow).

New technology and greater efficiency will provide enough extra capacity to meet projected growth in air travel demand.

High-speed rail, less environmentally damaging than aviation, could take much of the domestic aviation market.

Figure 4 - Open Up: ranking arguments (Open up UK 2014)

## 4. DEVELOPMENT

### 4.1 Central question

After an initial survey of the relevant literature (which was found to be overwhelmingly “grey”, ie not published in peer-reviewed journals), there was

a process of iteration that led to settling on the following central question for the airport expansion topic:

*Should we build additional airport capacity in the South-East of the UK?*

Whilst the Airports Commission has a UK focus, it quickly settled on the South East as the location in which any new capacity would be built. It therefore seemed sensible to frame the central question spatially in order to keep the number of feasible options manageable, not least because prior experience with Open Up topics had shown that users struggled with a number greater than five.

## 4.2 Options

The decision tree starts with a binary yes/no answer to the question of expansion with both answers leading to further options.

For the “no expansion” option, there is a choice between taking action to contain demand and making the best of what we have got. This was articulated in the first two options:

- Avoid the need for new capacity by encouraging people to travel without flying (*“Mode Shift”*)
- Avoid the need for new capacity through efficiencies and targeted pricing (*“Efficiencies/pricing”*)

As for new capacity, it was decided that the typical participant would be indifferent between the two Heathrow options short-listed by the Airports Commission. It was also decided that, despite the Commission’s decision to omit the so-called Boris Island in the Thames Estuary, it remained a sufficiently live issue to merit retention amongst the options offered to participants.

Thus the remaining three options:

- Build a new airport in the Thames Estuary
- Expand Heathrow
- Expand Gatwick

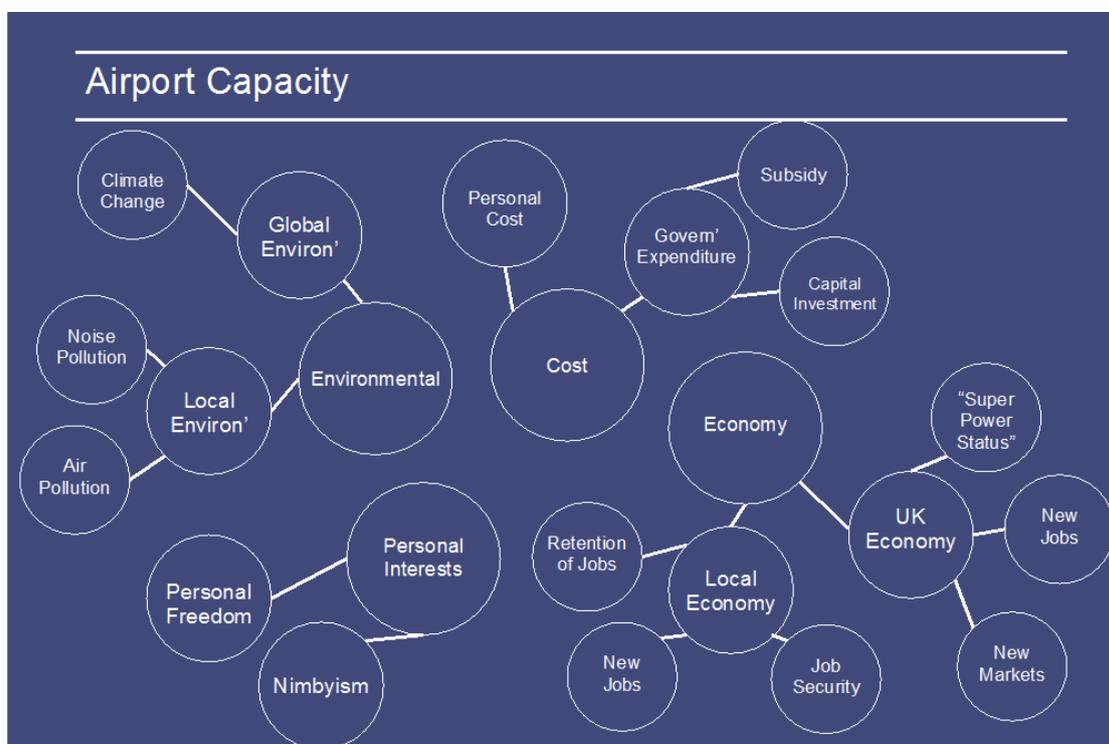
## 4.3 Arguments

On the basis of the literature review, a range of themes was identified as being relevant:

- Capacity
- Demand management
- Local environment: habitat loss
- Local environment: pollution

- Climate change
- Hub airport - connecting the regions
- Economy
- Location
- Alternative modes
- Competition
- Project cost

In each case, the quality of evidence available to support any position was assessed as a way of selecting arguments to include on the website. The interactions between the topics were also mapped (Figure 5).



**Figure 5 - "Mind map" of airport expansion themes**

After considerable additional work and further iteration, it was decided that arguments should be chosen primarily so as to differentiate between the options (subject to their being considered sufficiently compelling in their own right). Whilst there are, in principle, ten “pair-wise dilemmas” amongst the five options, this list was rationalised, and five substantive dilemmas selected.

- 1 Mode shift vs Efficiencies/pricing
- 2 New capacity vs Efficiencies/pricing
- 3 New capacity vs Mode shift
- 4 Expand existing airport (ie Heathrow or Gatwick) vs New airport

## 5 Gatwick vs Heathrow

Then, because the Open Up model is based on a set of 12 arguments (six opposed pairs), a further dilemma was added that was felt likely to provide further assistance to the user in pondering the options:

## 6 Sweat the asset/sweating the asset will not be sufficient

Once these pairwise dilemmas had been selected, the strongest (ie best-supported, most compelling) opposed pair available was associated with each (Table 1).

**Table 1 - Dilemmas between options and associated argument pairs**

No.	Dilemma (A vs B)	Favouring A	Favouring B
1	Mode shift vs Efficiencies/pricing	Pricing would not be effective in managing air travel demand so some alternative would still be necessary.	We can manage the demand for flying in the South-East by applying a pricing system a bit like London's congestion charge.
2	New capacity vs Efficiencies/pricing	If we don't expand capacity, the UK will lose air traffic to other European airports, which will hurt the UK economy.	Climate change poses a massive threat to our welfare and our economy so we must curb emissions.
3	New capacity vs Mode shift	High-speed rail is efficient only for large flows and can only compete with aviation over short distances.	High-speed rail, less environmentally damaging than aviation, could take much of the domestic aviation market.
4	Expand existing (ie Heathrow or Gatwick) vs New airport	A new airport will cost £82-112 billion, over 4 times as much as the most costly expansion option at Heathrow/Gatwick.	Expanding Heathrow or Gatwick is just a temporary fix: we need the extra capacity of a new, four-runway, airport.
5	Gatwick vs Heathrow	Expanding Gatwick would mean healthy competition between two large London airports, good for travellers and the economy.	Hub airport capacity is what London is short of. Expansion should be at London's existing hub airport (Heathrow).

No.	Dilemma (A vs B)	Favouring A	Favouring B
6	Sweat the asset vs sweating the asset won't be enough	New technology and greater efficiency will provide enough extra capacity to meet projected growth in air travel demand.	Operational efficiencies and innovations would not be enough to meet projected growth in demand for air travel.

Each of the arguments was supported by a paragraph of explanation and/or justification which the user could read as desired. For example, the statement asserting the limited scope of high-speed rail to absorb aviation demand was associated with the following:

*High-speed rail is the only realistic alternative to aviation but it can only complete with air over short distances (e.g. 500 miles or less) and is very expensive to build. So will not be an efficient option except where large numbers of people wish to make the trip. Even successful high-speed rail lines cannot take enough journeys from air travel to make new capacity unnecessary.*

#### 4.4 Socio-demographic and evaluative questions

With a view to understanding whether a) respondents resembled the wider population and b) personal characteristics were correlated with respondents' reactions to the site, a set of socio-demographic questions was devised.

These established:

- Gender
- Age group
- (Self-assessed) political orientation<sup>1</sup>
- Frequency of flying<sup>2</sup>
- (For UK residents) home postcode district

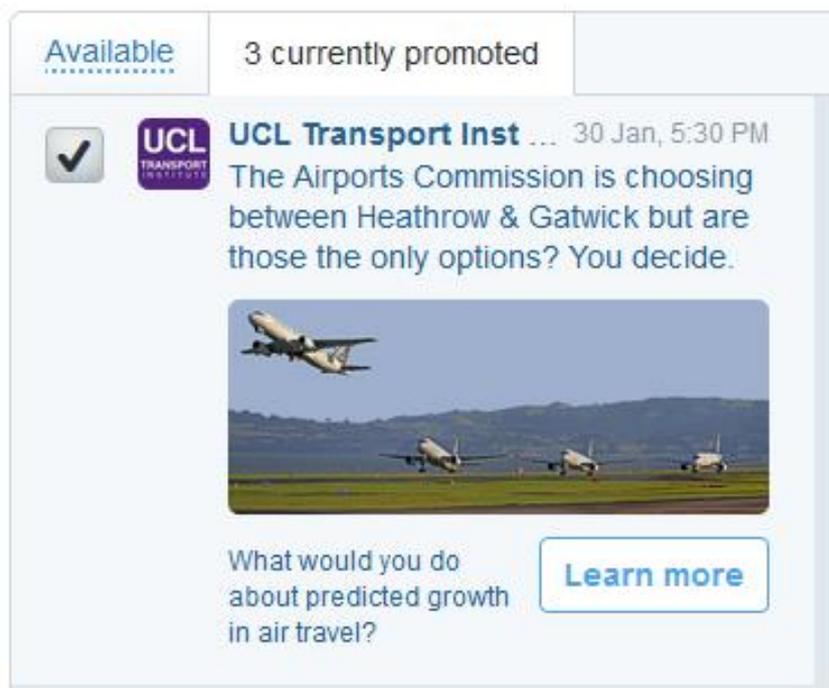
#### 4.5 Audit

Once the material had been assembled, it was sent to a selection of experts working on aviation (and representing multiple stand-points) who were asked to assess its balance, coverage and quality. On receipt of their comments, the copy was finalised and "laid out" on the website.

### 5. IMPLEMENTATION

Once the content had been finalised and the topic designed on the Open Up website, it was promoted using Twitter to a range of potentially interested individuals and organisations. Messages were sent to those with an explicitly pro-expansion position as well as others that oppose expansion. In both cases, an attempt was made to reach those with a declared spatial focus (eg Heathrow) as well as those with a more general interest in aviation.

This did not generate a significant number of participants so the topic was then advertised in South-East England on Twitter, using keywords and segmentation to target Twitter users likely to be interested in participating (Figure 6).



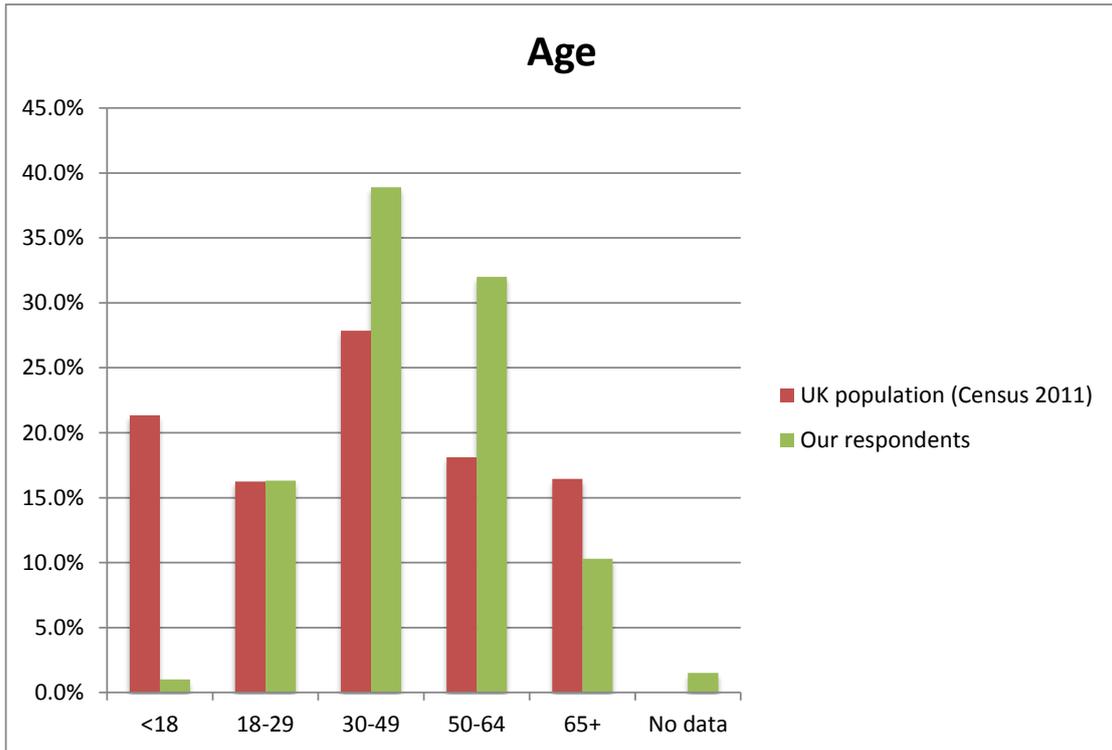
**Figure 6 - Example Twitter advertisement**

This generated a reasonable number of hits (the Open Up website claimed 1,500 had considered the topic as of February 2015) but a rather smaller number followed the topic through. When data were downloaded in February 2015 (at approximately the same time as the Airports Commission's consultation on its short-listed options concluded), approximately 290 had carried out the initial ranking of options and approximately 205 had followed through to the end of the exercise, ranking options a second time.

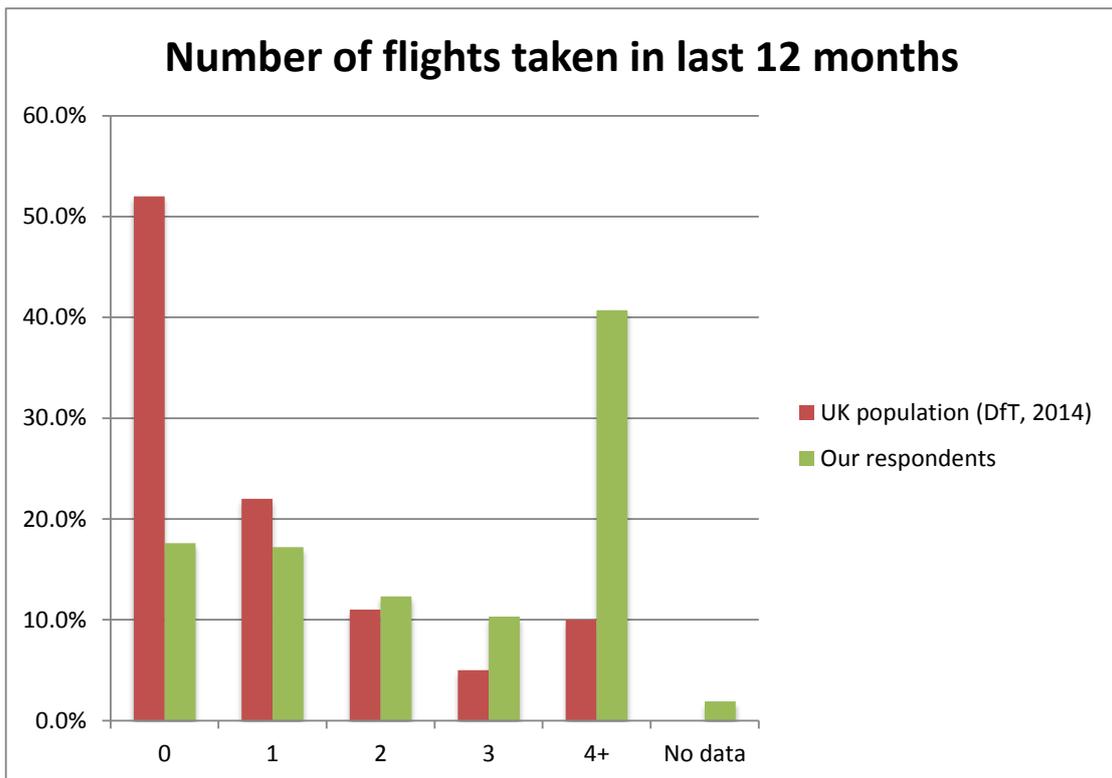
## **6. FINDINGS**

### **6.1 Respondent characteristics**

The respondent group was overwhelmingly domiciled in the UK and the bulk (81%) were male. Its age profile differed from that of the population at large in two respects – the under-representation of young people (unsurprising, given the subject matter) and the above-average proportions of people aged 30 to 64 (Figure 7).



**Figure 7 - Respondents' age profile**



**Figure 8 - Respondents' frequency of flying**

Respondents also differed from the wider population in their flying habits: a much smaller than proportion than average (Department for Transport 2014) reported not having flown in the last year; at the same time, the proportion

reporting four or more flights was much larger than the equivalent in the wider population (Figure 8).

Finally, the respondents' self-assessed political orientation<sup>3</sup> was both more weighted to the left and less centralised than that of the wider population (Figure 9).

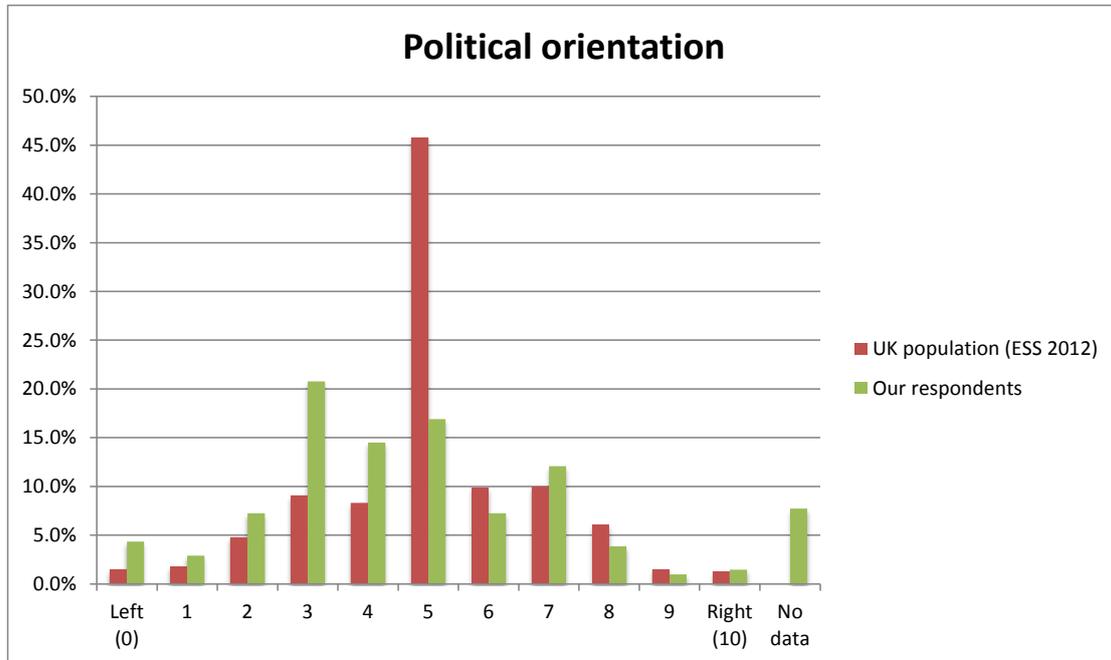
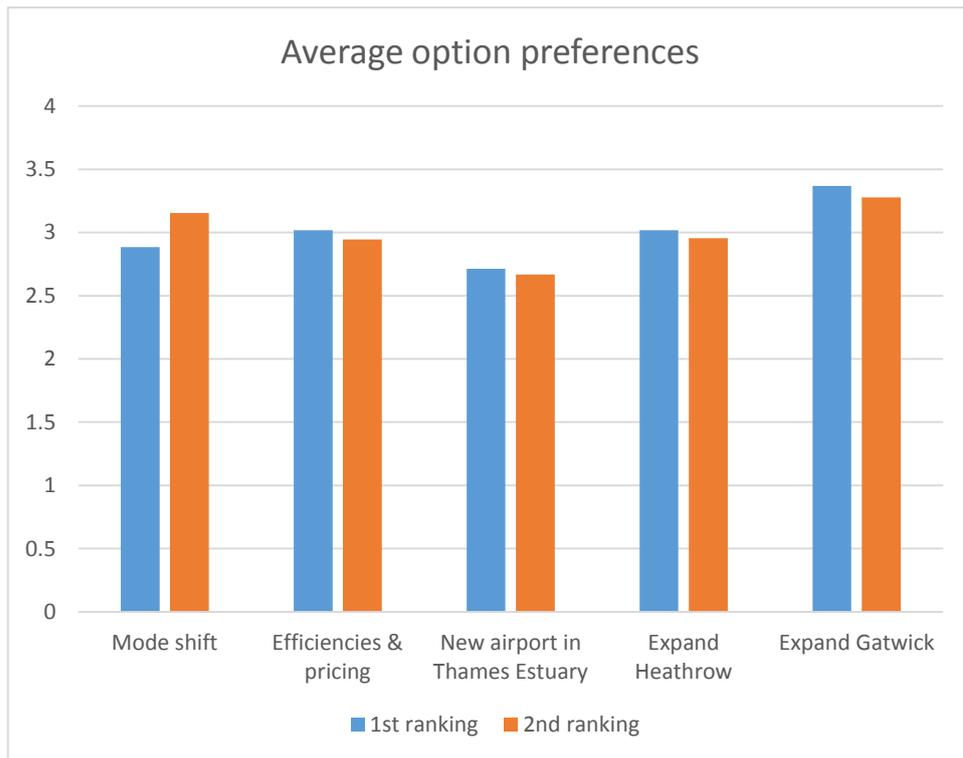


Figure 9 - Respondents' political orientation

## 6.2 Option preferences

Expanding Gatwick was on average the most popular<sup>4</sup> option in both the “before” and “after” ranking and this is consistent with certain reported polls at least as far as it compares with Heathrow (Thomas 2014); the new airport (Thames Estuary) started as the least popular option and remained so. The option that advocated mode shift (“avoid the need for new capacity by encouraging people to travel without flying”) started in fourth place but climbed to second (between “before” and “after”), thereby shifting Heathrow from second to third place and *Efficiencies/pricing* (“avoid the need for new capacity through efficiencies and targeted pricing”) from third to fourth (Figure 10). The change in *Mode Shift*'s position is statistically significant.

Beyond these headlines, there is a significant positive correlation between respondents' flying frequency and initial opinion of Heathrow expansion; there is equally a significant negative correlation between flying frequency and liking for *Mode Shift* and *Efficiency/pricing*. There are also some gender effects (a preference amongst females for Mode Shift and amongst males for Gatwick expansion and the new airport) but the small number of female respondents means these must be treated with caution.



**Figure 10 - Respondents' ranking of options**

There are significant correlations between age and favouring certain options, with older respondents preferring the two non-expansion options, whilst younger ones rank new capacity more highly. Those who grade themselves on the political left prefer non-expansion options, this also being a significant correlation. As for home location, no significant relationship was detected between proximity to any of the three airport sites (existing or proposed) and ranking of options.

### 6.3 Rating of arguments

When the mean “scores” allocated to arguments are considered (Figure 11), some pronounced variation is seen.

Mean scores range from 36 (*we can manage the demand for flying in the South-East by applying a pricing system a bit like London’s congestion charge*) to 70 (*climate change poses a massive threat to our welfare and our economy so we must curb emissions*) and it is striking that two arguments which appear to be in harmony should have elicited opposed reactions (though not necessarily from the same respondents).

There are various significant correlations between “before” option rankings and ratings of arguments. Those which are monotonic<sup>5</sup> are summarised in Table 2, as follows:

- A plus sign implies positive correlation, ie that allocating the option a high rank is associated with giving the argument a high score (and, equally, that a low rank is associated with a low score)

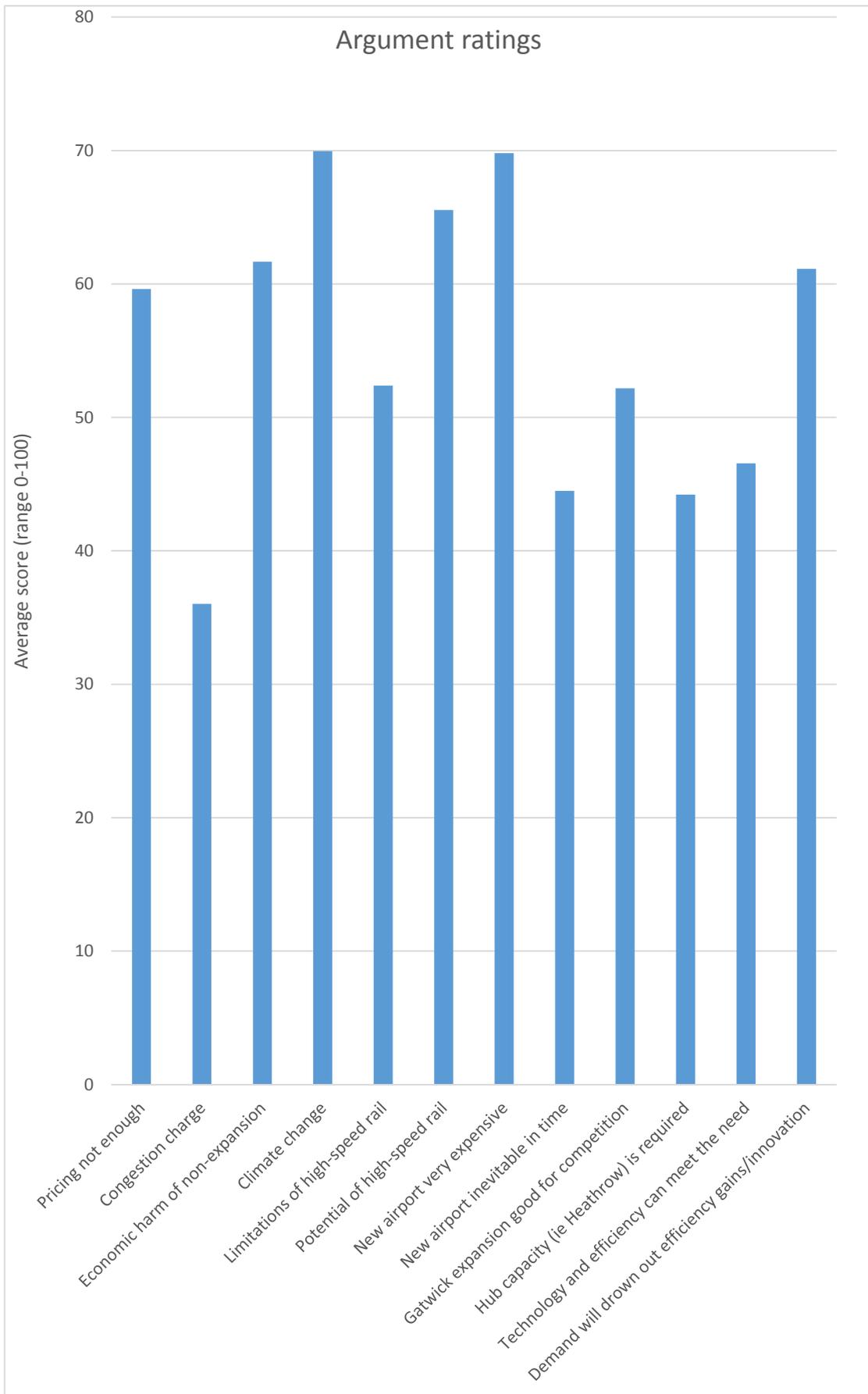


Figure 11 - Respondents' mean scores of arguments

- A minus sign implies negative correlation, ie that a high ranking for the option is associated with a low score for the argument etc

**Table 2 - Significant monotonic correlations between option rankings and argument scores**

Argument	Option				
	Mode Shift	Efficiencies/pricing	New airport (Thames Estuary)	Expand Heathrow	Expand Gatwick
Pricing would not be effective in managing air travel demand so some alternative would still be necessary	-		+		
We can manage the demand for flying in the South-East by applying a pricing system a bit like London's congestion charge				-	
If we don't expand capacity, the UK will lose air traffic to other European airports, which will hurt the UK economy	-			+	
Climate change poses a massive threat to our welfare and our economy so we must curb emissions		+			
Expanding Gatwick would mean healthy competition between two large London airports, good for travellers and the economy					+
Hub airport capacity is what London is short of. Expansion should be at London's existing hub airport (Heathrow)				+	
New technology and greater efficiency will provide enough extra capacity to meet projected growth in air travel demand				-	

There are also three significant correlations between argument scores and changes of ranking (from "before" to "after"):

- A high score for “*we can manage the demand for flying in the South-East by applying a pricing system a bit like London’s congestion charge*” is associated with increased ranking of *Mode Shift*
- A low score for the argument “*operational efficiencies and innovations would not be enough to meet projected growth in demand for air travel*” is associated with increased ranking of *Mode Shift*
- A high score for the argument “*A new airport will cost £82-112 billion, over 4 times as much as the most costly expansion option at Heathrow/Gatwick*” is associated with reduced ranking of *Expand Gatwick*.

## 7. DISCUSSION AND CONCLUSIONS

The question posed was *does deliberation change people’s position on airport expansion?* In answer to this in particular, there are two specific findings:

- That participating in this exercise led to a significant improvement in the ranking of *Mode Shift*
- That certain arguments may have been persuasive to respondents in reconsidering two of the options

The first of these is easier to interpret and raises few issues but it is not clear whether it was merely the process of thinking about the topic or the influence of particular assertions that changed people’s minds. The second finding is challenging in that the relationships identified are counter-intuitive, and this casts doubt on whether those who increased their ranking of *Mode Shift* were persuaded by arguments that were supportive of it. This is because the arguments associated with a change of ranking for this option were those relating to pricing (congestion charge) and the capacity of efficiencies/innovations to satisfy demand growth. More specifically, those who rated highly the argument in favour of pricing tended to increase their ranking of *Mode Shift*, as did those who appeared to think that efficiencies/innovation could satisfy demand. In respect of pricing, this is only strange in that pricing is part of the *Efficiencies/pricing* option so to increase the ranking of *Mode Shift* at the cost of this other option seems odd but may reflect uncertainty concerning the distinctions between the two non-expansion options. Where efficiencies/innovation is concerned, it is possible that framing this argument as a negative statement simply caused confusion. But the correlation between a reduced ranking for Gatwick expansion and a high score for an argument that emphasises the high cost of a new airport is equally hard to explain. It is possible that the mere mention of large sums of money gives pause to those previously supportive of new capacity but this seems something of a stretch.

Not that the researcher has any right to expect respondents to comply with the logic underlying the design of the exercise. The simple fact is that there are

these relationships, even if a ready explanation for them does not offer itself. So, yes, deliberation does change people's position on airport expansion. But should a greater change be expected? Not necessarily: the correlations between "before" rankings and argument scores are much easier to grasp and suggest cognitive consistency borne of respondents knowing what they think. The fact that most respondents came to the exercise through targeted Twitter advertising supports this and it is legitimate to ask whether a more "random" sample of citizens would display the same degree of consistency.

But the question posed is arguably too narrow, in that deliberation may be a good thing if it helps people to check the validity of their position, or enables them to broaden their understanding of the case for it, both of which may well be outcomes of undertaking the Open Up exercise.

A good deal more could be learnt about the nature of respondent opinion and its propensity to change if a larger sample of people took part. In particular, it would be interesting to know whether socio-demographic factors are associated with a greater or lesser degree of certainty concerning options - are right-wing people more amenable to arguments than left-wing, say? And more analysis could be done with the data from this modest set of respondents which may offer insights concerning the communication of the Airports Commission's findings.

Perhaps the last word on the subject should be left to respondents: they were asked "did you clarify your thinking or your opinion?" Of those who answered, 62% said they had.

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## 9. NOTES

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- <sup>1</sup> A standard question was taken from the European Social Survey (ESS) in order to enable comparison with country-level data (ESS ERIC n.d.).
- <sup>2</sup> Similarly, here the question posed was consistent with a recent survey conducted by the Department for Transport (Department for Transport 2014), which enabled the characteristics of the respondent sample to be compared with the UK population.
- <sup>3</sup> Respondents were asked: “In politics people sometimes talk of “left” and “right”. On this scale, 0 means the left and 10 means the right. Where would you place yourself on it?”
- <sup>4</sup> For the purposes of analysis, rankings were converted into scores, a rank of first place being allocated five points, second place four etc.
- <sup>5</sup> A “monotonic” function is such a way that it either never decreases or never increases. For example, a positively monotonic function will have a curve that does not go down but only either along or up.