



CENSUS ADVISORY GROUP

AG (07)05

Evaluation of the 2007 Census Test: Emerging findings

Introduction

1. The 2007 Census Test in England and Wales was held on 13 May 2007 in five different local authorities covering about 100,000 households. This paper presents emerging findings of the Test's main objectives and provides more information about when more detailed information will be available.
2. **Advisory Group members are asked to note:**
 - the decision to post-out the vast majority of questionnaires in 2011;
 - the decision to outsource recruitment, training and pay for 2011;
 - the early results on, and further analysis planned for, the income question; and,
 - the planned evaluation reports and their target publication dates.

Purpose of the Test

3. The main objectives of the Test were to assess:
 - the effect on response of:
 - the use of post-out to deliver questionnaires; and
 - the inclusion of a question on income;
 - the feasibility of major innovations in operational procedures, such as the outsourcing of recruitment, training and pay.

Test Design

4. The 2007 Test in England & Wales was a large scale test in five local authorities (LA) selected to reflect a range of geographic conditions and social characteristics, covering about 100,000 households in total.
5. The sample of households selected from within the five LAs was divided into five equal strata (approximately 20,000 households), according to an Enumeration Targeting Categorisation (ETC). As a result, the hardest to

count areas, ETCs 4 and 5, accounted for 40% of the Test areas compared with only 10% in England & Wales. This oversampling in the hardest to count areas was done to allow comparison between ETCs and to ensure that the operational procedures were sufficiently tested in the hardest areas.

6. The overall return rate for the Test was 46%. If the households selected had been representative of England & Wales as a whole, it is estimated that the Test return rate would have been 58%. This is comparable to the 59% return rate achieved in the 1997 Test.

Emerging findings

7. The results of the 2007 Test are still being analysed. Some areas of Test evaluation are more advanced than others and the results presented here focus on the main objectives of the Test. More detailed evaluation of the Test will be made available over the next few months (see paragraph 30 below for more detail).

Delivery method

Rationale

8. One of the key methodological changes proposed for 2011 is to move to delivering the majority of questionnaires by post, rather than by hand. Such a strategy is being considered:
 - to reduce serious risks experienced in 2001, in particular the failure to recruit a large number of enumerators;
 - to provide savings to invest in improving response from hard to count groups and areas through more targeted follow-up and support processes; and,
 - because of the limited success in making contact at delivery.

Although the use of post-out is new for England & Wales, post-out is used in other countries. In particular it was used in the 2006 Canadian Census, which is the closest design to the England & Wales design, and is also used in the US Census.

Assessment criteria

9. The evaluation of post-out is based largely around the evaluation of the 2007 Test and the results of three key questions:
 - Does post-out have an impact on return rates?
 - What are the comparative costs for post-out and hand delivery for the same overall response (that is, by including the additional follow-up

costs necessary to recover from a lower initial response from post-out)?

- Can we get an address list of sufficient quality to support post-out?

Return rates

10. The 2007 Test was designed to estimate whether or not the behaviour of respondents (i.e. propensity to respond) is significantly reduced in areas where they received their questionnaire through the post rather than through hand delivery by an enumerator. If so, it is assumed that the drop in initial return rates (before the start of follow-up) can be recovered with more follow-up. The costs section assesses whether any additional follow-up required is affordable.
11. In order to Test the propensity to respond between hand delivery and post-out, the test was designed so that each of the delivery methods had the same number of follow-up attempts, three. As a result, more contact was made in hand delivery areas (i.e. contact when delivering the questionnaires) which would intuitively imply a higher response than post-out areas.
12. The household return rates at the end of the Test by LA and Enumeration Targeting Categorisation (ETC*) are shown in the following table. For more information on ETC categories, please see Paper AG (06) 10.

Household return rates by delivery method by ETC and LA			
ETC	Hand delivery	Post-out	Difference (HD-PO)
1	68.1%	63.6%	4.5%
2	55.9%	50.5%	5.4%
3	49.3%	44.7%	4.6%
4	36.5%	37.1%	-0.6%
5	33.4%	29.1%	4.2%
All areas	47.7%	44.5%	3.2%
Local authority			
Camden	35.4%	34.0%	1.4%
Liverpool	46.7%	41.5%	5.2%
Stoke	56.0%	52.3%	3.7%
Bath	61.2%	59.6%	1.6%
Carmarthenshire	66.2%	60.9%	5.3%
All areas	47.7%	44.5%	3.2%

13. From this it can be concluded that:

- Apart from ETC 4, there is a clear, statistically significant difference in the return rates between post-out and hand delivery methods. This translates to an overall statistically significant difference (in the Test areas) of 3.2 percentage points. A more detailed report on the statistical analysis and results is being prepared and will be made available in December.

14. The differences between post-out and hand delivery do not differ noticeably across the ETCs. This suggests that, although post-out has an impact on return rates, the difference in return rates between the two methods is not affected by the hard-to-count characteristics of an area.

15. Although the 2007 Test has shown that post-out has an impact on return rates, can the drop in initial return rates (before the start of follow-up) be recovered with more follow-up?

- The follow-up success rate for post-out is slightly less overall (less than 0.5 per cent), and across all ETCs, than it is for hand delivery, with broadly equal amounts of follow-up in hand-delivery and post-out areas. The difference is very small which supports the assumption that the success of follow-up is not affected by the delivery method and therefore a small reduction in initial return rates, with a post-out methodology, would be recoverable with more follow-up.
- It also implies that the gains associated with hand delivery are merely to get a higher initial return rate and it does not affect the success rate at follow-up. Mitigating the reduced initial response due to a post-out methodology with targeted publicity will be possible.

Costs

16. One of the reasons for considering a post-out methodology is that it intuitively offers cost savings that can be used elsewhere in enumeration, such as reducing the recruitment risk through increased pay rates, targeting follow-up in hard to count areas and increasing community liaison initiatives.

17. To assess the costs, a high level cost model was developed that estimates the costs for different mixes of delivery method. It uses the initial return rates (the rate before the start of follow-up) to estimate the number of follow-up visits that would be required to achieve an overall response rate of 94 per cent (the 2001 rate), i.e. it estimates the additional follow-up visits required in post-out areas to achieve a the same response (94 per cent) as a hand delivery area.

18. The cost model has shown that:

- For 100 per cent post-out and hand delivery with a difference in initial return rates of 5 percentage points (approximately the difference experienced in the Test), post-out results in savings of between £28 million and £35 million depending on the success of follow-up – for the same overall response rate of 94 per cent.
- The estimated difference in initial return rates in 2011 is estimated to be 6 percentage points (based on the differences in return rates experienced in the Test) providing an estimated cost saving of between £25 million and £33 million.
- There would need to be a difference in initial return rates of more than 10 percentage points before the cost of post-out started to equal, or be more expensive, than hand delivery.

19. The estimated savings are attributable to the delivery stage due to the significant reduction in the number of field staff to recruit, train, equip and pay. However, hidden within these savings is an increased cost at follow-up resulting from the expected small increase in non-response as a result of moving to a post-out methodology.

Quality of the address register in the 2007 Test

20. New addresses found in the Test provide a key indicator of the quality of the address register used for questionnaire delivery. In these instances, if we post-out, we are reliant on missing households requesting a questionnaire or being identified during follow-up. The following table shows the number and percentage of new addresses that were found during the 2007 Test by delivery method.

New addresses found during the Test by ETC			
New addresses			
Delivery method	ETC	Per cent	Number
Post-out	1	0.5	53
	2	0.2	16
	3	0.6	54
	4	0.6	61
	5	2.6	303
	All	1.0	487
Hand delivery	1	1.4	123
	2	0.8	78
	3	1.4	140
	4	1.6	186
	5	1.7	194
	All	1.4	721
Total		1.2	1,208

21. The table shows that:

- Overall, the number of new addresses found was 1.42 per cent in hand-delivery areas and 0.95 per cent in post-out areas.
- In 2011 an estimated 1.3 per cent of households would be missed off the address register if the same levels of hand-delivery coverage were experienced in the whole of England and Wales.
- A quarter of the addresses found in hand-delivery areas were found at follow-up, suggesting that delivery enumerators would still miss some addresses.

22. To understand the quality of the address-list used during the enumeration phase, an analysis of the addresses found was conducted. The analysis looked at just over half of the new addresses found and showed that:

- Of the 540 new addresses examined, approximately 68 per cent of these were sub-premise addresses; it is likely that most of these addresses were present at the time of an address check and should have been identified.
- Approximately 20 per cent of the addresses found during enumeration were in fact included in a subsequent version of the Ordnance Survey address product updated to Test Census day. Therefore some reduction in the number of new addresses found could be achieved in 2011 through an update from the address register product before Census day.

23. The results suggest that significant improvements to the coverage of the address register can be made, through:

- improvements to the quality of address checking, in particular the identification and recording of addresses not on the list;
- subsequent updates of the address register in areas of high change or areas with significant quality issues (either through a readdress check or product updates) would reduce the number of missed addresses between the time of the initial address check and Census day;
- improvement by the Address Register supplier(s) of the coverage and accuracy of their product(s).

Conclusions and recommendations

24. Based on the evidence from the Test, the cost modelling and an analysis of risks, the conclusions are:

- Post-out does have an impact on initial return rates, but this is small enough to consider that the drop in initial response could be made up with more follow-up.
- The ETC, on its own, is not a significant factor in the choice of which delivery method to use in an area.
- The improvements identified for the address register and follow-up procedures suggest that the levels of undercoverage on the register will be small and manageable.

- A post-out methodology will provide significant savings to invest in targeted follow-up and community liaison.
- The risks identified are manageable but further development of mitigations needs to be initiated.

25. On balance, the evidence suggests that a post-out methodology brings a number of advantages and savings to manage the risks associated with post-out and follow-up. Follow-up is crucial, whatever the delivery method, and how we implement the procedures and manage the risks will be essential to maximising response rates.

26. Therefore ONS has decided that post-out will be the primary method of delivering questionnaires in 2011.

27. Key areas of further work to support post-out are:

- develop an enumeration strategy that brings together all of the key enumeration processes supporting a post-out methodology;
- develop a strategy for constructing an address register that takes account of the development points noted above;
- develop further mitigations and contingencies for the key risks associated with post-out;
- development of a web strategy to help understand web response patterns and their impact on post-out (for example types of areas) and follow-up;
- procurement of a postal service provider and putting in place controls to manage and monitor the quality of the delivery;
- research into the types of areas where hand delivery may be appropriate and whether these areas are 'predictable' and operationally practical

Income

28. A decision on the inclusion of an income question will depend on the findings from the 2007 Test, the outcome of consultation on other topics and the relative priority for this question in relation to other user demands for new Census information.

29. A fourth page of questions per person is being considered but this would have to be funded by other government departments. A decision on the addition of a fourth page is likely to be made during the winter. Current assumptions on likely 3- or 4-page topics are presented in Advisory Group paper AG (07) 07.

A final decision on topics and questions will be made in spring 2008. The inclusion of a question on income will be considered as part of this process, provided that the evaluation of the Test shows that the inclusion of an income question will not adversely affect the quality of responses.

30. To date only an analysis of return rates has been conducted. The difference in return rates between questionnaires with and without an income question is 2.9 percentage points. Overall, questionnaires with income had a return rate of 44.6 % compared with 47.5% from questionnaires with no income question. The table below summarises the results by LA and ETC.

Household return rates by income/no income question by ETC and LA				
		No income	Income	Difference (NI-I)
ETC				
	1	66.5%	65.0%	1.5%
	2	54.4%	51.9%	2.5%
	3	49.0%	44.7%	4.3%
	4	38.3%	35.5%	2.8%
	5	32.1%	30.4%	1.7%
	All areas	47.5%	44.6%	2.9%
Local authority				
	Camden	35.6%	33.9%	1.7%
	Liverpool	45.7%	42.4%	3.3%
	Stoke	55.2%	52.9%	2.3%
	Bath	61.4%	59.4%	2.0%
	Carmarthenshire	64.8%	62.1%	2.9%
	All areas	47.5%	44.6%	2.9%

31. Further assessment of the quality of responses to the income question is being undertaken along with the results of the Census Test Evaluation Survey - which specifically tested views on the income question from both responders and non-responders. The results of this analysis will be published in a more detailed report this winter.

Outsourcing recruitment training and pay

32. A major element of the Test was to outsource the Recruitment, Payroll and Training capabilities which had all previously been done by Census personnel internally or through cascading using Field Managers. The only element to be outsourced previously was in 2001 when Chessington Computer Services Ltd were used for managing the payroll; this was deemed unsuccessful for various reasons specific to the contract and its delivery.
33. Through a competition using an established framework of the HM Prison Service, which was available to ONS, Hays Specialist Recruitment Limited were awarded a contract for the 2007 Test to provide a combined Recruitment, Payroll and Training service.
34. The evaluation of the Test was carried out not only to aid the decision of suitability to outsource Recruitment, Payroll and Training but also to determine whether or not it worked well as a single package. **As a result of this evaluation and of market and options analysis, ONS intends to outsource the recruitment, training and pay of field staff in the 2011 Census in England and Wales.**
35. The high-level themes supporting this decision include:
 - Recruitment, payroll and training of 50,000 people for a limited period are non-core services of ONS. All ONS internal divisions have confirmed that they cannot provide these capabilities to this scale without significant investment.
 - The 2007 Test, where these services were outsourced, proved successful in terms of:
 - confidentiality and data protection (declarations signed by each enumerator);
 - all aspects of employment risk (Hays employment contract used);
 - recruitment risk;
 - replacement risk (attrition);
 - training scheduling in line with the recruitment programme and Test delivery plan especially when managing daily attrition issues;
 - management of weekly pay and expenses problems;

- clear and direct interface between all three services with mutual responsibility;
 - local knowledge and management;
 - performance management (IT skills and process); and
 - ONS ability to interact and manage a global specialist business.
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- Outsourcing the entire package allows ONS to delegate employment risk, management risk and disciplinary risk (subject to choice of contract).
 - Strong communication between all elements is essential when considering the high attrition rates and critical planning during a Census. The interface between separate businesses providing individual services is considered a major risk.
 - Recruitment and payment on this scale must be linked. Failure between these elements can significantly impact the motivation and consequent attrition levels of the Field Force and ultimately be costly (as was experienced in the 2001 Census).
 - Specialist, nationwide businesses are more suited to carrying out this work and have a significant infrastructure in place.

Planned evaluation reports

36. There are four publications planned to report on the evaluation of the 2007 Test. These are set out in the table overleaf:

Report	Brief outline of content	Target publication date
Statistical Evaluation of the 2007 Census Test	<ul style="list-style-type: none"> • Summary of Test design and stratification • Analysis of response rates by treatment (DM and Income) • Analysis of quality by treatment (characteristics of responders/representative) 	December 2007
2007 Census Test - Evaluation of the delivery method	<ul style="list-style-type: none"> • Description of Test procedures • Summary of response rates by delivery method • Other impacts, e.g. contact centre, publicity • Analysis of address register quality • Comparison of costs • Risk assessment • Conclusions and recommendations 	December 2007
2007 Census Test - Evaluation of the Income question	<ul style="list-style-type: none"> • Description of Test procedures • Analysis of response rates by income/no income • Quality of responses • Public views to the question • Identification of any cost implications • Risk assessment • Conclusions and recommendations 	January 2008
Evaluation of 2007 Census Test – Summary Report	<ul style="list-style-type: none"> • An evaluation of the Test’s operational procedures; • Analysis of questionnaire responses to new or altered questions (Visitors, second residence, year of arrival, citizenship, ethnicity and national identity). • Analysis of within household coverage, overcount, and visitors 	March 2008