

The Efficacy of Focused Enumeration

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Structure of session

1. Introduction: identifying ethnic minorities in sample surveys
2. A brief history of focused enumeration
3. How well do current applications work?
 1. Assessments of yield
 2. Effectiveness in areas of different concentrations
4. Characteristics of people identified through focused enumeration
5. Conclusions

Identifying ethnic minorities in UK sample surveys

- Random probability samples - sample from eligible population with known probability of selection
- But no comprehensive sample frame on which ethnic minorities are identified
- So, have to sample from frame on which they are comprehensively covered but not identified and screen in the field
- But usually screening has to be done by interviewers in field

Face to face screening methods

- Interviewers approach large sample of addresses and screen for people of eligible ethnic groups at each
- Nationally representative sample of ethnic minorities - require issuing 30 addresses per achieved ethnic minority interview
- Very expensive

Reducing screening costs

- One approach is to limit fieldwork to areas of higher concentration

Estimates of levels of concentration of people categorised as Asian, Black, Other or Mixed in Britain: 2001 Census

% ethnic minority in ward	No. of wards	% of all ethnic minorities	Concentration of ethnic minorities (%)
30%+	367	47	48
20%+	582	61	40
10%+	1074	76	29
5%+	1839	86	21
1%+	6366	99	10
All	8800	100	9

Reducing screening costs

- Table shows, for example, that 86% of ethnic minority individuals lived in wards in which 5%+ of population ethnic minority
- If prepared to limit findings to 86% of the ethnic minority population, can reduce number of addresses screened from 30 to 12 times achieved sample
- But sample biased: no coverage of the 14% living in low concentration areas
- Also method only as good as concentration figures: 2001 Census out-of-date

Focused enumeration

- Method developed to cover low concentration areas at reasonable cost
- Involves screening by proxy - from neighbouring addresses
- Relies on **visibility of ethnic minorities**
- Used in a number of high profile surveys, notably the Fourth National Survey of Ethnic Minorities, the Health Survey for England, the British Crime Survey and the Home Office Citizenship Survey
- Two main versions of the method have now been used

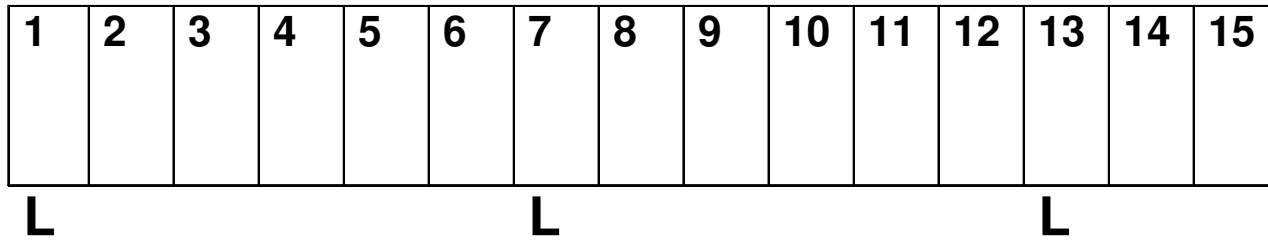
The method as originally developed

- Brown and Ritchie (1981) and as used in third and fourth National Surveys of Ethnic Minorities
 - Draw sample comprising large clusters of adjacent addresses
 - Visit every n_{th} (eg 6_{th}) address (“location” addresses) and ask about ethnic origins of people living (i) at location addresses (ii) the $n-1$ addresses to the left and the $n-1$ to the right
 - Substitutions for location addresses allowed under defined circumstances
 - Special rules for street corners, flats, rural areas, etc

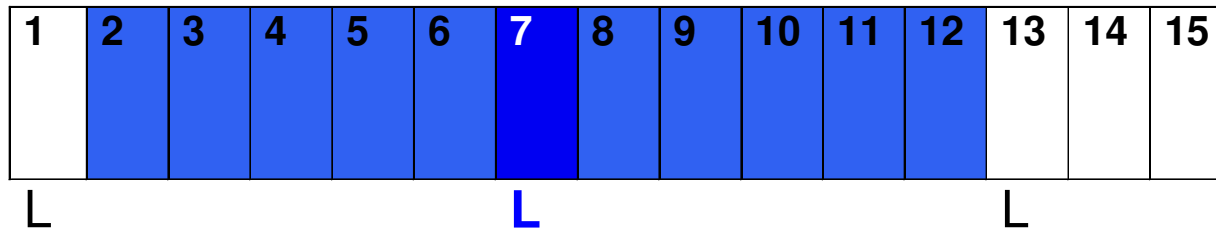
The method as originally developed

- If positive enumeration given for *any* address to the left or to the right, the interviewer calls at *all* intervening addresses in the relevant direction
- Each address enumerated twice, once from each of two location addresses
- Visit intervening addresses if positive identification from *either* address or if two “don’t knows”

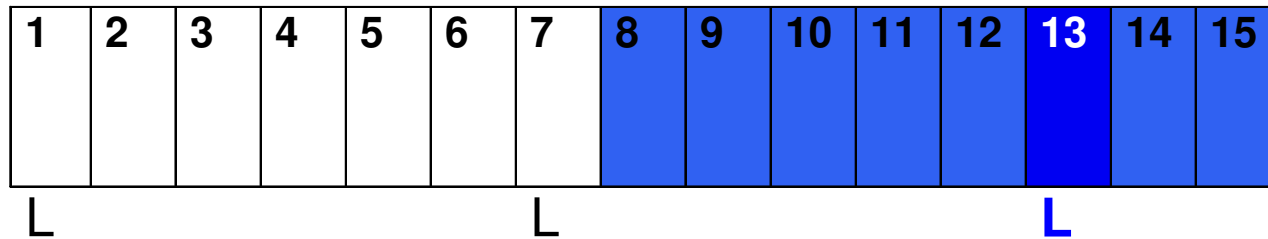
The method as originally developed



The method as originally developed



The method as originally developed



Later developments

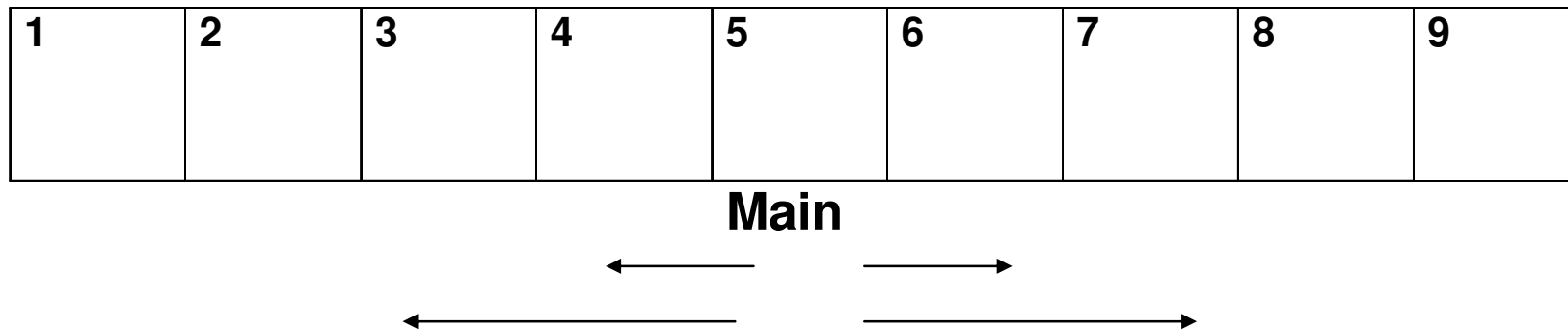
- Method adapted in 1988 to provide ethnic minority boost to main British Crime Survey. Subsequently used to provide boosts on Citizenship Survey and OCJS.
- Now much the most common use of the method
- Method involves asking at main sample address about eligibility of those living at the n addresses to the left and at the addresses to the right (n commonly ranged from 1 to 2)
- Either *interviewers identify* neighbouring addresses or *pre-select from PAF*

Later developments

- Note, each address enumerated from only one 'location' address - not from two as in original method
- Health Survey for England – variant of this where focused enumeration based around a central '*screen address*' address instead of a *main sample* address

Focused enumeration

Example of focused enumeration from a main sample address



Interviewer screens addresses 3, 4, 6 and 7 from main sample address 5

Previous tests of the method

- Original method tested in 1981; one test of the method as finally developed:
 - 2,100 addresses in four towns of low ethnic minority concentration
 - Screened by focused enumeration and then face-to-face
 - Focused enumeration identified 26 out of the 27 addresses identified face-to-face
- No other testing of the method in any form has been done
- Hence the need for further examination – especially of method in its most commonly used form

New tests

- Tests of efficacy of method in its currently used forms
 1. Direct comparisons of number of ethnic minority interviews delivered through focused enumeration (and face-to-face screening) with core sample
 2. Examination of relationship between ethnic minority interview yield and Census data
 3. Examination of characteristics of respondents identified by means of focused enumeration

Citizenship Survey 07/08 & 09/10

- Citizenship 2009/10, Q1-3 (Ipsos MORI and BMRB) & 2007/08 (NatCen)
- Core sample of wards
- FE: in core wards with 1%-18% concentration, two addresses on both sides of core sample addresses (screened for all non-white groups)
- F2F screen: sample of additional wards with >18% concentration

British Crime Survey 03/04 to 06/07

- Four years of data (BMRB)
- Core sample of postcode sectors
- FE: in all postcode sectors, two addresses on both sides of core sample addresses (screened for all non-white groups)
- No direct F2F screen

Health Survey for England 2004

- Separate core and boost samples (NatCen)
- Core sample of wards
- F2F screening: sample of additional wards with >2% concentration (screened for six ethnic groups)
- FE: in F2F screening wards 2%-10%, two addresses on both sides of screen sample addresses

Direct comparisons: FE

- Extract wards/PCSs in core sample with concentration that *would* have been eligible for FE
- Count number of ethnic minority interviews for those core wards/PCSs
- Compare with numbers generated using FE

Direct comparisons

	Core sample	Focused enumeration	Relative yield rate (FE to F2F)
<u>Citizenship Survey 09/10</u>			
EM interviews per 1,000 issued address	26	14	55%
Base (total issued addresses)	9,320	37,280	
<u>Health Survey for England</u>			
EM interviews per 1,000 issued address	50	24	49%
Base (total issued addresses)	1,470	12,800	
<u>British Crime Survey</u>			
EM interviews per 1,000 issued address	41	19	47%
Base (total issued addresses)	260,080	702,773	

Direct comparisons

- 'Lose' about half of potential interviews compared with a gen pop survey
- Cannot apportion the 'lost' interviews between non-response and non-identification
 - required data not collected
 - cannot measure ethnic minority response rates

Direct comparisons: F2F screening

- Also 'lose' potential interviews with F2F screening
- Compare number of ethnic minority interviews generated in main core sample with F2F screening addresses
- Note these comparisons are for points with higher concentration: >10% for HSE and >18% for Citizenship

Direct comparisons: f2f screening

	Core sample	F2F screening	Relative yield rate (screen to F2F)
<u>Citizenship Survey</u> <u>09/10</u>			
EM interviews per 1,000 issued address	192	141	73%
Base (total issued add's)	660	7,854	
<u>Health Survey for England</u>			
EM interviews per 1,000 issued address	132	116	88%
Base (total issued add's)	2,898	23,825	

Ethnic minority interview yield and Census concentration

- Analysis from Citizenship Survey:
 - 2009/10 Q1 and Q2 (Ipsos MORI and BMRB)
 - 2007/8 Q1 to Q4 (NatCen)
- Compare relationship between the survey yield and Census concentration for the two methods (FE and F2F screening)

Ethnic minority interview yield and Census concentration

- Regression analysis on database of sampling points (wards)
- DV: yield (proportion of issued addresses delivering an ethnic minority interview)
- IVs:
 - Census concentration for ward
(ethnic minority adults / all adults)
 - Dummy for sampling method (FE = 0; F2F = 1)
 - Census concentration by sampling method interaction

Regression: Citizenship 09/10

	B	Std. error	t	Sig.
Constant	0.00	0.00	0.33	0.74
Census concentration	0.30	0.06	5.17	0.00
Sample type	-0.02	0.01	-1.61	0.11
Census conc X Sample type	0.13	0.06	2.08	0.04

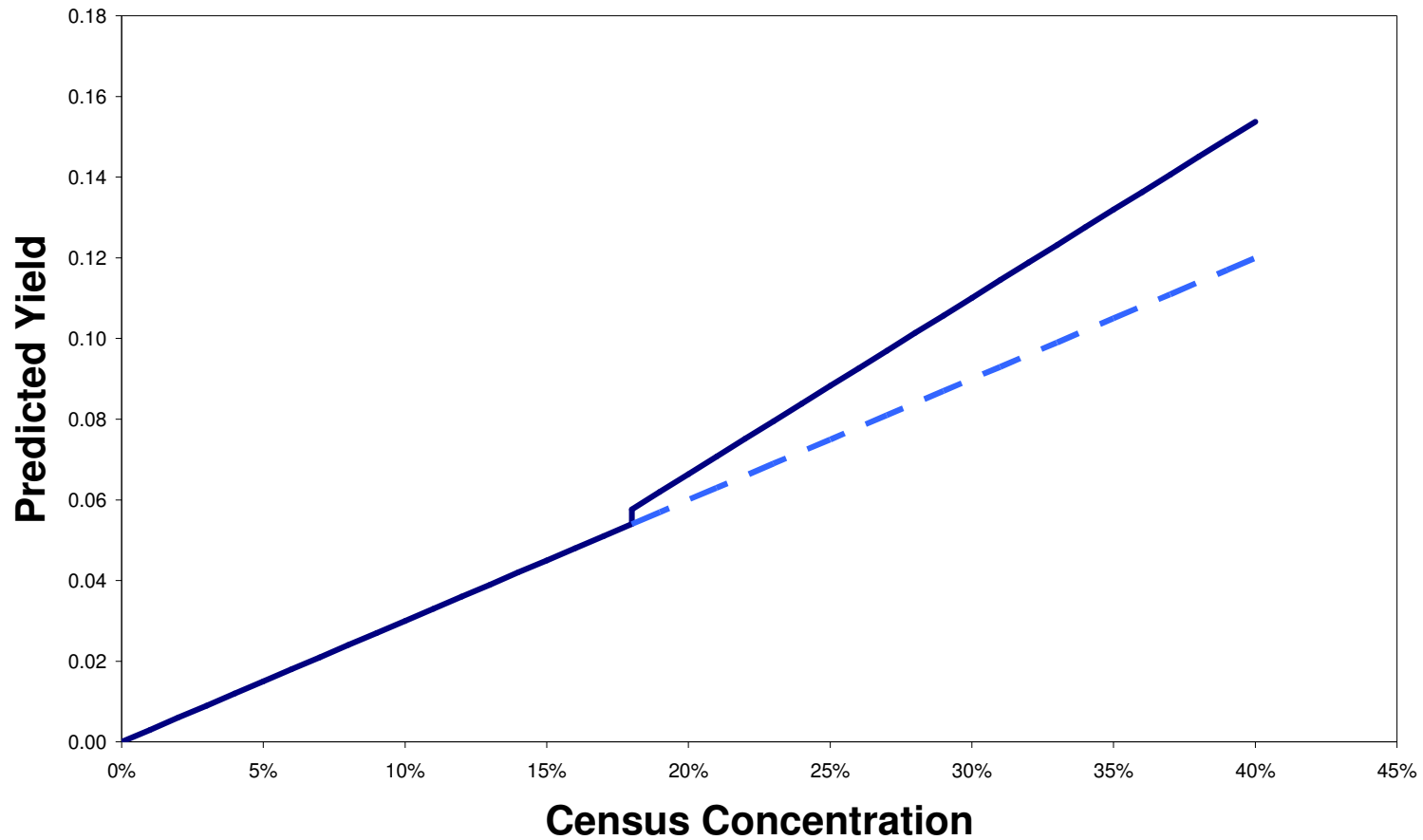
R² = 0.812

Regression: Citizenship 07/08

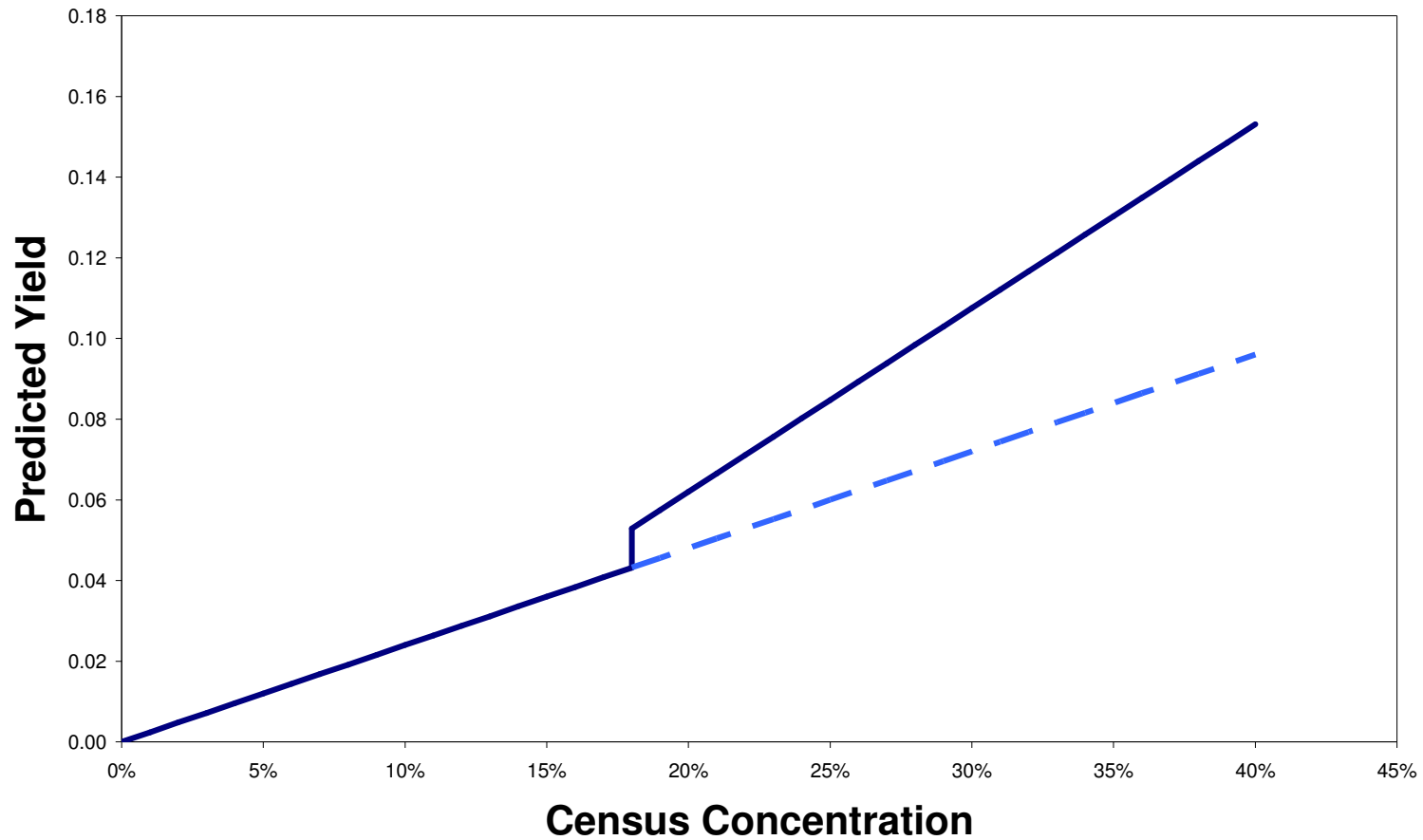
	B	Std. error	t	Sig.
Constant	0.00	0.00	0.48	0.63
Census concentration	0.24	0.04	5.50	0.00
Sample type	-0.03	0.01	-4.93	0.00
Census conc X Sample type	0.22	0.05	4.84	0.00

$R^2 = 0.783$

Model: Citizenship 09/10



Model: Citizenship 07/08



A further complication

- Inspection of scatter plots suggested that for FE, relationship between yield and Census concentration may be curvilinear
- To test this fitted regression for FE screened addresses:
- DV: yield (proportion of issued addresses delivering an ethnic minority interview)
- IVs:
 - Census concentration for ward
(ethnic minority adults / all adults)
 - Census concentration for ward squared

FE Regression: Citizenship 2009/10

	B	Std. error	t	Sig.
Constant	-0.01	0.00	-2.25	0.03
Census conc.	0.60	0.09	6.71	0.00
Census conc. squared	-2.00	0.57	-3.49	0.00

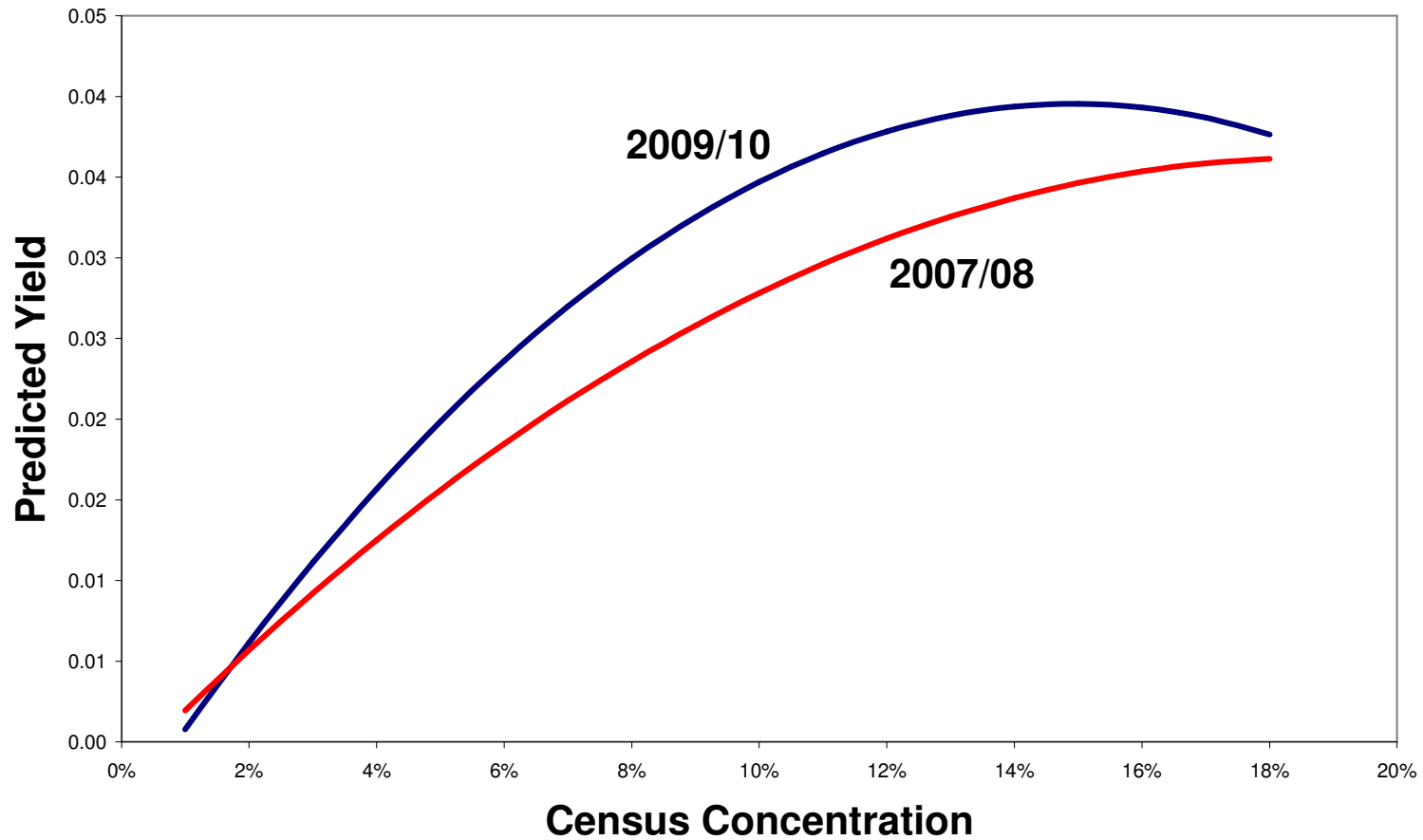
$R^2 = 0.351$

FE Regression: Citizenship 2007/08

	B	Std. error	t	Sig.
Constant	0.00	0.00	-1.44	0.15
Census conc.	0.41	0.06	6.59	0.00
Census conc. squared	-1.08	0.38	-2.85	0.01

$R^2 = 0.266$

Model: FE Quadratic



Characteristics of core and FE ethnic minority sample members

- British Crime Survey 2003-7
 - Nearly 14,000 FE-sampled respondents
 - Possible to analyse sub-groups *within* some ethnic groups (for another time...)
 - Large enough to compare substantive estimates derived from FE sample with those derived from core sample
 - Selected a small range of demographic variables plus substantive variables for analysis

BCS 03-07 Ethnic minority distributions

	Type of sample		Difference
	Core address (n=10809)	FE address (n=13857)	
Indian	24.0	27.9	+3.9
Pakistani	14.7	16.9	+2.3
Bangladeshi	4.2	5.8	+1.6
Black African	11.7	12.7	+1.0
Black Caribbean	11.5	12.4	+1.0
Other Black Background	1.1	0.9	-0.2
Mixed - White and Black African	1.1	0.9	-0.3
Mixed - White and Black Caribbean	2.5	2.0	-0.5
Chinese	4.3	3.7	-0.6
Other Mixed Background	2.0	1.3	-0.7
Mixed - White and Asian	2.2	0.9	-1.3
Other Asian Background	7.9	6.2	-1.7
Other Ethnic Group	12.7	8.4	-4.3

BCS 03-07 Ethnic minority age distributions

	Type of sample		Difference
	Core address (n=10805)	FE address (n=13847)	
16-19	8.1	8.9	+0.8
20-24	11.6	11.8	+0.2
25-34	26.1	26.2	+0.1
35-44	24.0	23.9	-0.1
45-54	15.2	15.2	0.0
55-64	8.2	7.4	-0.8
65-74	4.9	4.9	0.0
75-84	1.8	1.5	-0.3
85+	0.2	0.2	0.0

BCS 03-07 Ethnic minority religion distributions

	Type of sample		Difference
	Core address (n=10345)	FE address (n=13169)	
Muslim	30.4	33.8	+3.4
Sikh	6.8	9.4	+2.6
Hindu	13.9	14.4	+0.5
Other	1.7	1.7	0.0
Jewish	0.2	0.1	-0.1
Buddhist	2.3	2.0	-0.3
None	10.1	7.6	-2.5
Christian	34.5	31.1	-3.4

BCS 03-07 Ethnic minority time at address

	Type of sample		
	Core address (n=10809)	FE address (n=13856)	Difference
Less than 12 months	17.4	14.5	-2.9
12 months < 2 years	10.2	10.0	-0.2
2 years < 5 years	21.1	21.3	+0.2
5 years < 10 years	17.1	16.8	-0.3
10 years or longer	34.3	37.4	+3.1

BCS 03-07 Perceived problem of attacks due to skin colour

	Type of sample		
	Core address (n=10641)	FE address (n=13663)	Difference
Very big problem	6.2	7.7	+1.5
Fairly big problem	12.5	13.4	+0.9
Not a very big problem	40.3	40.9	+0.6
Not a problem at all	41.0	38.0	-3.0

BCS 03-07 How good a job are the police doing in local area

	Type of sample		Difference
	Core address (n=10336)	FE address (n=13178)	
Excellent	10.6	9.6	-1.0
Good	46.2	45.0	-1.2
Fair	30.2	30.3	+0.1
Poor	10.2	11.4	+1.2
Very poor	2.8	3.7	+0.9

BCS 03-07 Ever taken drugs (DV)

	Type of sample		
	Core address (n=8167)	FE address (n=10476)	Difference
Yes	18.2	15.8	-2.4
No	81.8	84.2	+2.4

Conclusions: yield

1. Overall focused enumeration substantially less effective in delivering ethnic minority interviews than face-to-face methods
2. Indication that effectiveness of focused enumeration less in areas of greater ethnic minority concentration

Conclusions: yield

- FE less effective than F2F screening
- Why?
 - lower identification rate?
 - lower response rate amongst those identified?

Conclusions: yield

- Response rate explanations implausible

	FE	F2F screen
Screen RR	88%	90%
Interview RR	55%	53%
Net RR	48%	47%

- Likely that identification rate lower

Conclusions: yield

- FE effectiveness decrease at higher concentrations
- Need to confirm this finding on other surveys
- Possible explanations
 - reduced 'visibility'?
 - reduced interviewer effort – satisficing approach?
 - lower response rates in higher concentration areas?
 - less likely to know neighbours in higher concentration areas?

Conclusions: characteristics

- FE biased towards main ethnic groups at expense of mixed and rarer groups
- FE biased towards South Asian religions
- FE biased against newer residents
- Also differences on BCS specific variables
 - racial attacks, confidence in police and drug taking
- Generally differences are fairly small