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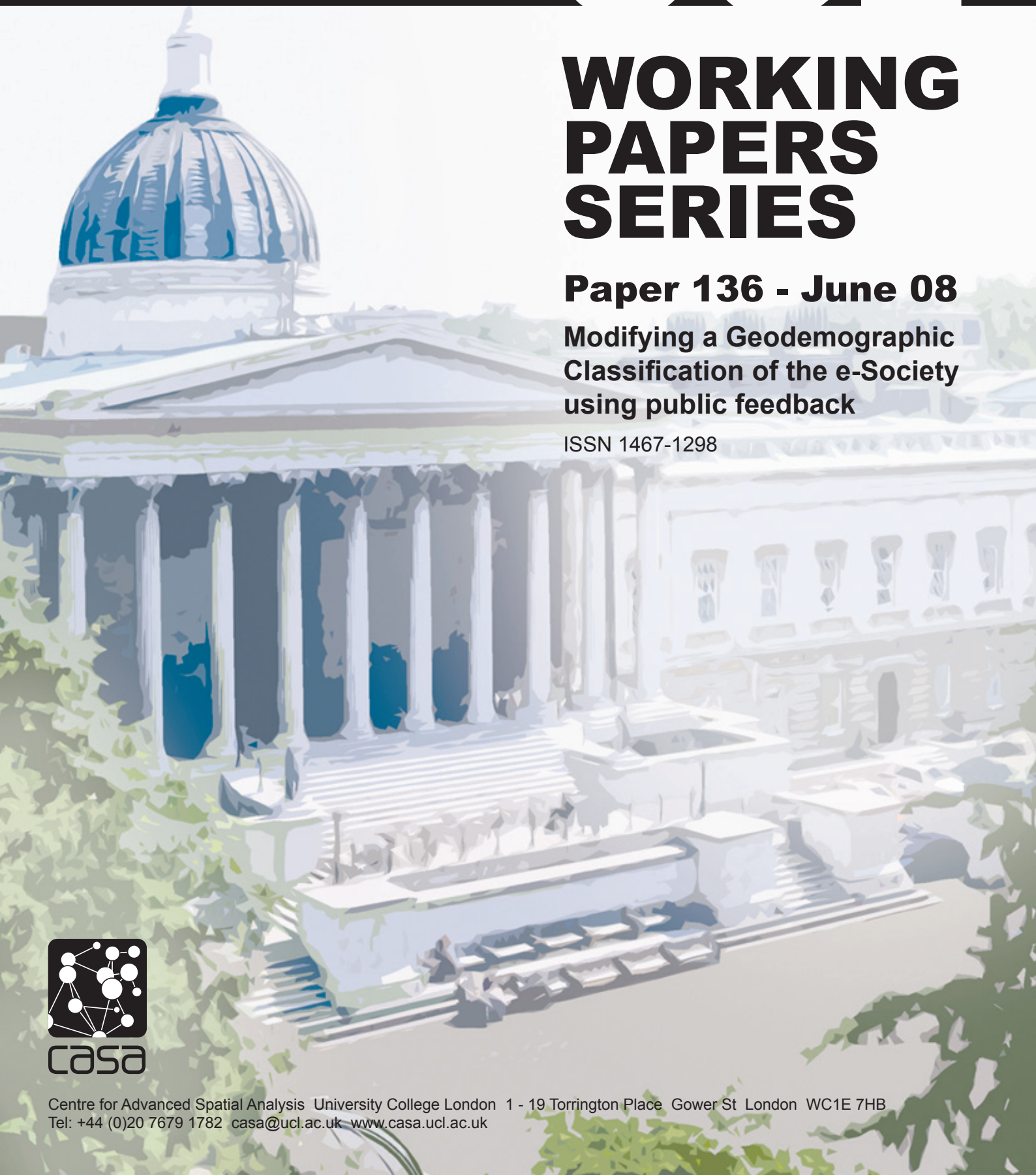

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Modifying a Geodemographic Classification of the e-Society using public feedback

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Abstract

The e-Society geodemographic classification (Longley et al., 2008) categories neighbourhoods based on their engagement with new information communication technologies. This classification was launched online in 2006, and allowed users to both view and comment on the accuracy of their assigned neighbourhood Type. This paper utilises the user generated feedback on the accuracy of the e-Society classification and through external validation calculates their accuracy. The pilot methodology developed in this paper is scalable and could be repeated for any classification. We believe that this methodology gives the recipients of these classification procedures a voice that their concerns of classification accuracy can be heard.

Introduction and Background

The UCL "e-Society" classification (Longley et al., 2008) was created in 2005 as part of an ESRC funded project to examine the impact of new information and communication technologies (NICT) on the spatial organisation of the "digital divide". Using an industry standard construction methodology (Webber and Farr, 2001) this research produced a bespoke geodemographic classification designed to measure the digital differentiation (Burrows and Gane, 2006) between the use and engagement of NICT at a local scale. In general terms, geodemographic classification represent an "analysis of people by where they live" (Sleight, 1997:16), therefore categorising people into similar behavioural groups using their domicile; typically at the unit postcode or Output Area level. Geodemographic classification are used by the majority of enterprises in the UK for strategic marketing through the local targeting an engagement with their potential customers (Harris et al., 2005). Outside of these commercial applications geodemographic classification are showing a renaissance in applications for public service delivery (Longley, 2005) with examples across Education (Singleton and Longley, 2008, Harris et al., 2007, Batey et al., 1999), Health (Shelton et al., 2006) and Policing (Ashby and Longley, 2005). Using the e-Society classification a website was built (http://www.spatial-literacy.org/esocietyprofiler/) which enabled users to enter their postcode and be presented with their corresponding e-Society Group and Type alongside rich descriptions of the typical characteristics of the people who live within these areas. This classification hierarchy is presented in Table 1.

Table 1: The E-Society Classification Hierarchy (Longley and Singleton, 2008)

-Society Type	e-Society Type Postcode Frequency (percent)	e-Society Group Postcode Frequency (percent)
A01 Low technologists	128807 (6.9)	440824 (23.5)

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A02 Cable suffices	57166 (3.0)	
A03 Technology as fantasy	77951 (4.2)	
A04 Mobile's the limit	113553 (6.1)	
A05 Too old to be bothered	14851 (0.8)	
A06 Elderly marginalised	48496 (2.6)	
B07 The Net ; What's that?	10978 (0.6)	
B08 Mobile Explorers	34719 (1.9)	114098 (6.1)
B09 Cable TV heartland	68401 (3.6)	
C10 E-bookers and communicators	46176 (2.5)	
C11 Peer group adopters	43686 (2.3)	89862 (4.8)
D12 Small time net shoppers	183282 (9.8)	
D13 E for entertainment	107174 (5.7)	290456 (15.5)
E14 Rational utilitarians	98777 (5.3)	
E15 Committed learners	26698 (1.4)	181396 (9.7)
E16 Light users	55921 (3.0)	
F17 Computer magazine readers	55803 (3.0)	
F18 E for financial management	5561 (0.3)	
F19 On-line apparel purchasers	60380 (3.2)	161825 (8.6)
F20 E-exploring for fun	40081 (2.1)	
G21 Electronic orderers	78952 (4.2)	78952 (4.2)
H22 E-committed	37380 (2.0)	
H23 E - professionals	7362 (0.4)	44742 (2.4)
	Unknown and Business Postcodes = 473879 (25.3)	

Once the website development was complete a press release was given. This was picked up by BBC Online news team on 8th August 2006 (BBC, 2006). This publicity generated a huge amount of interest in the website, including 20,694 unique visits to the site on the afternoon of the 8th and a further 22,113 hits the following day. For a full write up of this activity see Longley and Singleton (2008).

The e-Society website offers the general public a tool to view their unit postcode assigned geodemographic Type and is similar to a service offered by the commercial classification builder CACI[1]. This company have provided their classification to the website UpmyStreet[2] which enables the public to view their ACORN Type assignment. We believe this website sets a good example in the commercial geodemographic industry by openly enabling a user to view their assigned Type. Where an assigned Type is erroneous, people living within these unit postcodes may experience discriminatory effects through mis-targeting by service providers (users of the

classification). This problem is perhaps less serious in private sector applications such as the targeting of financial products, however, the problem of mis-classification can be far more harmful in public sector use where real life chances may be wrongly apportioned due to erroneous Type assignments(Singleton and Longley, 2008). For this reason, we believe that it is paramount that geodemographic classification builders should provide the public with a mechanism through which they can supply feedback on their assignment, and that through this feedback classification builders can investigate the validity of these claims. Although CACI provide the general public with a method of accessing their classification, there are not structured way in which users can submit feedback on these assignments.

The e-Society website presents a tool which allows users to give feedback relating to the accuracy of their assigned classification Group and Type. After a user has entered their postcode, they are presented with a message enquiring whether they agreed with our assignment. If not, they can enter the hierarchical Group and Type which they feel better represents their neighbourhood. These results are written up in full in Longley and Singleton (2008) so will not be repeated here, however for a summary overview the differences between our predicted e-Society Group assignment and the user generate feedback are summarized in Table 2.

Table 2: Predicted versus Feedback e-Society Group Assignment (source: Longley and Singleton, 2008)

		Feedback Group Frequency & Percentages								
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**SUM**
Predicted Group Frequency & Percentages	**A**	28	47	179	215	294	158	59	322	1302
		(2.2)	(3.6)	(13.7)	(16.5)	(22.6)	(12.1)	(4.5)	(24.7)	(100)
	B	0	6	31	29	46	20	5	72	209
		(0.0)	(2.9)	(14.8)	(13.9)	(22.0)	(9.6)	(2.4)	(34.4)	(100)
	C	3	2	8	13	26	22	4	123	201
		(1.5)	(1.0)	(4.0)	(6.5)	(12.9)	(10.9)	(2.0)	(61.2)	(100)
	D	2	5	6	14	87	60	18	259	451
		(0.4)	(1.1)	(1.3)	(3.1)	(19.3)	(13.3)	(4.0)	(57.4)	(100)
	E	4	1	5	7	23	28	8	110	186
		(2.2)	(0.5)	(2.7)	(3.8)	(12.4)	(15.1)	(4.3)	(59.1)	(100)
	F	2	2	0	4	10	25	8	115	166
		(1.2)	(1.2)	(0.0)	(2.4)	(6.0)	(15.1)	(4.8)	(69.3)	(100)
	G	0	2	3	4	13	19	2	112	155
		(0.0)	(1.3)	(1.9)	(2.6)	(8.4)	(12.3)	(1.3)	(72.3)	(100)
	H	1	0	0	1	2	1	0	32	37
		(2.7)	(0.0)	(0.0)	(2.7)	(5.4)	(2.7)	(0.0)	(86.5)	(100)
	Unknown	34	31	46	116	203	172	75	568	1245
		(2.7)	(2.5)	(3.7)	(9.3)	(16.3)	(13.8)	(6.0)	(45.6)	(100)
	SUM	74	96	278	403	704	505	179	1713	3952

The most significant finding of these feedback was that 48% of all feedback related to the ‘e-unengaged’ Group (Longley and Singleton, 2008), and the public response highlighted that there clearly had been a large misallocation of neighbourhoods to this group. In this paper we aim to present an analysis of how the e-Society feedback, and geodemographic feedback in general can be validated for their appropriateness, and present a pilot methodology whereby public feedback can be used to re-assign geodemographic classification cluster assignments.

Methodology

The re-assignment methodology used a series of heuristic checks to assess the validity of the user generated feedback and were built in the macro language of the statistics software SAS[3]. The first check tested whether the

feedback was from a valid a residential address. This is important because the classification relates to people living within neighbourhoods, however, despite this being explained on the website some users entered feedback for postcodes that were non residential.

Within a unit postcode there can be multiple postal delivery points which can relate to a mixture of both residential or businesses delivery points. The current classification and feedback tool uses only postcodes in the classification assignment and it is therefore impossible to know which type of address a person is referring to when they have entered their feedback, and as such, some checks were required to assess the probability that the address is residential. Therefore, the first heuristic checks the distribution of postal delivery points within with unit postcode using the National Statistics Postcode Directory (NSPD)[4]. This was appended onto the feedback unit postcodes, and where more than fifty percent of the delivery points were categorised as businesses, the feedback was marked as unreliable. Furthermore, additional checks were run to make sure the unit postcode was a non P.O Box address, a single large user delivery point (predominantly businesses) or a terminated postcode. These additional checks provide extra assurance that the feedback was for a current and valid postcode and contained delivery points of residential status.

Outside of the residential address checks, the main heuristic for assessing the classification validity uses ACORN, a commercial geodemographic classification from CACI. ACORN was selected above other commercial classifications which the authors have access to as it appends at the same scale as the collected feedback and is independent of those Experian data used to construct the e-Society classification (Longley et al., 2008). Using an independent classification to perform this external validation aims to prevent circularity in the checks through sharing of the same or similar input data and design methodology.

The ACORN classification divides neighbourhoods into three hierarchies consisting of five categories which divide into 17 Groups and then into a further 56 Types (not shown) (See Table 3). The names within the typology are designed to be memorable for end users of the classification and provide a broad description of the people who typically live within these areas.

Table 3: ACORN Category and Groups (Source: CACI, (2005)

ACORN Category	ACORN Group	% UK Pop
Wealthy Achievers	A Wealthy Executives	8.6
	B Affluent Greys	7.9
	C Flourishing Families	9.0
Urban Prosperity	D Prosperous Professionals	2.1
	E Educated Urbanites	5.5
	F Aspiring Singles	3.8
Comfortably Off	G Starting Out	3.1
	H Secure Families	15.5
	I Settled Suburbia	6.1
	J Prudent Pensioners	2.7
Moderate Means	K Asian Communities	1.5
	L Post-Industrial Families	4.7
	M Blue Collar Roots	7.5
Hard-Pressed	N Struggling Families	13.3

	O Burdened Singles	4.2
	P High Rise Hardship	1.6
	Q Inner City Adversity	2.1

Index scores were calculated for the distribution of ACORN Types within each e-Society Type. The results from this analysis are shown in Table 4 as a matrix of index scores. The index scores are calculated by dividing the percentage of postcodes in an ACORN Type within an e-Society Type, against the distribution of the same ACORN Type but within the total population. This ratio is multiplied by 100 to give an index score where 100 represents the national average. Thus, a score of 50 demonstrates an ACORN type that is half as represented as the national average within an e-Society Type, and a score of 200, twice the national average. In Table 4 index scores over 120 (considered over represented) are highlighted in grey. These grey coloured scores show which unit postcodes are categorized by similar geodemographic types across the two classifications.

Table 4: Cross Tabulation of ACORN Types with e-Society Types in England

	e-Society Types																						
Acorn Types	**A01**	**A02**	**A03**	**A04**	**A05**	**A06**	**B07**	**B08**	**B09**	**C10**	**C11**	**D12**	**D13**	**E14**	**E15**	**E16**	**F17**	**F18**	**F19**	**F20**	**G21**	**H22**	**H23**
A1 Wealthy mature professionals, large houses	18	9	143	12	143	8	116	10	1	16	3	23	5	225	311	213	450	182	120	348	130	62	425
A2 Wealthy working families with mortgages	12	14	41	7	48	2	21	12	2	20	4	92	19	61	255	84	350	85	429	418	435	53	163
A3 Villages with wealthy commuters	44	15	195	22	169	24	143	22	2	35	10	46	12	306	204	153	260	195	126	259	115	45	116
A4 Well-off managers, larger houses	30	23	176	14	103	8	74	13	1	15	4	67	12	273	288	201	363	151	145	267	162	28	109
B5 Older affluent professionals	89	37	418	40	236	16	126	14	1	16	4	39	8	275	240	323	237	120	95	145	92	20	77
B6 Farming communities	43	3	186	33	163	22	81	28	2	20	7	31	10	635	95	81	157	131	128	149	74	13	32
B7 Old people, detached homes	137	48	316	71	280	69	142	41	6	50	20	55	15	248	151	186	146	129	107	111	90	31	52
B8 Mature couples, smaller detached homes	236	159	379	109	198	42	85	30	4	25	11	74	28	191	133	217	91	57	92	51	83	13	13
C 9 Older families, prosperous suburbs	72	78	228	34	143	26	97	29	6	48	20	160	22	93	271	244	338	131	140	166	182	35	137
C 10 Well-off working families with mortgages	19	35	49	10	30	5	32	30	4	47	14	167	34	60	211	112	223	77	466	200	466	68	40
C 11 Well-off managers, detached houses	83	96	201	41	95	20	79	26	4	31	12	126	38	218	226	228	192	100	145	119	153	22	39
C 12 Large families and houses in rural areas	5	6	19	4	16	3	12	5	2	3	3	13	7	81	30	17	38	15	30	26	29	2	8
D 13 Well-off professionals, larger houses and converted flats	22	23	74	17	164	31	154	29	23	150	99	101	12	44	143	95	343	265	161	335	236	182	556
D 14 Older professionals in suburban houses and apartments	77	38	140	54	336	104	176	59	20	154	79	89	20	59	124	135	173	190	125	181	147	166	214
E15 Affluent urban professionals, flats	14	6	15	17	115	38	154	64	60	360	154	40	14	22	53	30	81	493	75	358	144	570	812
E16 Prosperous young professionals, flats	6	2	5	11	78	38	93	27	31	294	70	7	5	6	24	14	10	363	18	385	40	618	869
E17 Young educated workers, flats	9	6	4	26	22	105	76	78	64	330	239	12	11	3	8	6	6	120	16	122	33	661	587
E18 Multi-ethnic young, converted flats	19	8	7	26	51	88	124	192	153	588	197	33	31	8	29	14	14	392	27	155	64	640	708
E19 Suburban privately renting professionals	37	11	23	50	177	140	105	97	55	363	220	40	22	22	35	36	38	227	68	176	107	529	364
F20 Student flats and cosmopolitan sharers	26	18	11	24	41	81	78	87	109	400	371	68	36	9	19	21	15	147	71	86	114	675	493
F21 Singles and sharers, multi-ethnic areas	31	38	9	41	51	86	88	325	330	329	343	151	95	7	23	21	28	270	49	55	92	216	140
F22 Low income singles, small rented flats	51	31	14	125	43	248	165	143	112	327	343	46	51	14	18	18	12	73	47	39	64	359	89
F23 Student terraces	10	8	8	7	7	22	22	51	62	302	238	66	25	12	13	7	11	38	227	980	131	710	795
G24 Young couples, flats and terraces	37	37	19	38	31	51	61	175	72	395	314	174	60	12	25	26	32	72	250	60	192	328	48
G25 White-collar singles/sharers, terraces	67	47	46	44	114	75	133	101	197	222	411	174	62	26	45	44	39	192	121	77	153	198	66
H26 Younger white-collar couples with mortgages	31	43	31	17	30	19	68	97	18	176	89	240	55	23	75	56	95	97	455	103	352	148	39
H27 Middle income, home owning areas	104	83	153	59	130	46	119	71	19	87	53	150	55	145	137	137	134	134	151	107	144	56	36
H28 Working families with mortgages	39	122	32	22	27	11	45	39	12	44	27	373	118	26	168	164	89	44	189	49	191	25	10
H29 Mature families in suburban semis	135	290	175	56	97	22	71	26	10	34	25	259	83	31	230	306	142	99	76	38	145	19	10
H30 Established home owning workers	193	297	53	112	45	49	57	66	44	48	54	236	227	27	87	133	28	43	84	18	70	21	4
H31 Home owning Asian family areas	19	66	26	24	67	28	99	77	184	124	156	275	120	28	89	50	133	324	84	96	182	93	85
I32 Retired home owners	464	173	291	295	340	126	68	28	6	28	18	36	18	55	53	93	26	28	43	19	35	10	3
I33 Middle income, older couples	306	356	216	127	197	45	67	32	10	31	25	132	66	48	138	248	60	60	66	27	69	11	7
I34 Lower incomes, older people, semis	291	200	111	256	125	118	81	81	31	59	54	106	100	69	72	98	31	50	78	26	65	21	10
J35 Elderly singles, purpose built flats	111	22	72	270	374	470	111	77	32	180	124	26	21	28	33	69	33	80	47	68	55	170	78
J36 Older people, flats	148	59	99	163	209	201	143	97	45	175	147	88	49	58	74	83	58	110	92	62	90	119	56
K37 Crowded Asian terraces	4	12	2	12	3	37	10	103	1127	95	404	40	200	9	36	3	17	74	28	29	42	154	116
K38 Low income Asian families	12	25	2	29	9	64	42	190	892	102	452	68	197	4	19	5	3	20	21	11	37	120	48
L39 Skilled older families, terraces	75	157	32	47	58	37	73	72	89	76	113	364	171	17	75	87	48	106	108	38	141	42	16
L40 Young working families	86	235	9	69	14	66	59	135	177	57	68	163	549	6	26	28	5	11	60	23	37	24	3
M41 Skilled workers, semis and terraces	160	149	38	116	62	87	93	119	111	105	138	177	209	28	43	59	17	55	94	23	72	49	11
M42 Home owning families, terraces	106	132	10	108	28	108	72	144	334	87	264	170	319	10	19	22	4	43	46	8	44	47	4
M43 Older people, rented terraces	117	102	15	181	41	178	101	151	254	134	316	82	146	11	15	18	5	34	46	14	46	97	18
N44 Low income larger families, semis	200	261	28	167	30	104	89	151	125	52	47	122	385	22	41	51	12	26	59	14	34	18	5
N45 Low income, older people, smaller semis	262	215	26	380	45	201	103	161	133	54	73	67	218	16	27	38	8	18	39	9	27	17	4
N46 Low income, routine jobs, terraces and flats	187	266	14	176	16	156	146	291	240	97	108	67	343	9	19	21	4	19	57	13	34	41	7
N47 Low income families, terraced estates	174	263	6	213	11	202	110	199	329	38	83	41	353	4	9	10	1	9	19	3	12	15	2
N48 Families and single parents, semis and terraces	113	216	4	215	6	263	182	440	450	68	77	29	375	2	11	9	1	4	30	3	13	16	4
N49 Large families and single parents, many children	54	185	4	56	6	159	113	485	366	114	54	54	500	4	13	11	2	8	77	14	22	17	3
O50 Single elderly people, council flats	135	95	20	496	53	376	115	165	146	81	144	35	98	13	17	23	6	18	28	9	26	44	10
O51 Single parents and pensioners, council terraces	115	144	4	323	11	338	174	309	354	63	121	20	179	3	11	7	1	17	15	3	10	23	4
O52 Families and single parents, council flats	59	108	5	186	15	336	384	613	502	111	246	22	183	3	9	12	1	25	19	6	13	51	12
P53 Old people, many high-rise flats	34	30	7	355	44	758	139	119	137	101	243	8	31	6	8	6	3	19	7	9	13	104	31
P54 Singles and single parents, high-rise estates	29	46	3	227	23	500	290	299	352	116	366	12	60	4	8	8	2	26	10	12	14	118	38
Q55 Multi-ethnic purpose built estates	25	19	4	107	40	319	211	433	460	318	289	19	52	3	17	6	5	181	14	61	25	221	188
Q56 Multi-ethnic crowded flats	18	28	2	50	13	160	274	615	577	325	249	30	102	4	26	6	6	138	25	39	35	183	168

These index scores are used to calculate the validity of the user feedback assignments based on the distribution of the ACORN classification within an e-Society Type. The algorithm examines the feedback postcode, encodes this with an ACORN Type and then selects the intersection from Table 4 between this and the proposed user feedback e-society Type. The selected index score represents the propensity that the ACORN classification of this postcode typically is represented in the feedback e-Society Type nationally. The index score is then ranked within the same e-Society Type column, and if the index score is ranked within the top ten highest scores then the feedback is assumed to be valid. This process validates the feedback e-Society Type based on the ACORN Type assignment of the same postcode, that is, if an ACORN classified neighbourhood typically (across

England) shows an over representation of the user assigned feedback e-Society type, then the feedback is probably an approximately correct choice, and as such the classification should be changed for this postcode. This ranking could be adjusted if desired to make the reassignment more or less sensitive depending on the level of feedback received. After trying a number of different calibrations, a ranking of ten demonstrated an approximate level of reassignment which was deemed acceptable against the total feedback received. However, as with many decisions in the construction of geodemographic classification themselves, such as the frequency of Types, the selection of this specific calibration is based on personal judgement.

Results and Discussion

The heuristics were run across all feedback postcodes and 845 (21.4%) of the feedback observations given were deemed reliable. The full results from this feedback reliability assessment are shown in Table 5. Of the 3952 feedback observations which were assessed, 165 could not be matched with the AFPD. These addresses had either been erroneously entered by the user or were new postcodes which post dated the construction of the e-Society classification. 158 (4%) of the feedback were for large user postcodes that contain a single delivery point which received over 500 items of mail a day. 83 (2.1%) of the feedback related to terminated postcodes, i.e. those postcodes which are no longer in use. 79 (2.0%) of the feedback were for postcodes which contained multiple delivery points that were predominantly non-residential.

Once the ACORN based heuristic was run on the valid feedback postcodes, 845 (21.4%) of total feedback were considered valid. These changes referenced postcodes across all e-Society types (See Figure 1), and Figure 2 shows the frequencies of the new user assigned and externally validated e-Society Types.

Table 5: Feedback Reliability Assessment Results

	n	**%**
Large Users	158	4.0
Terminated	83	2.1
P.O. Box	12	0.3
Predominately Business Addresses	79	2.0
Unmatched	165	4.2
Reliable feedback (ACORN)	954	24.1
Unreliable feedback (ACORN)	2998	75.9
Unreliable feedback (ACORN & Postcode)	3107	78.6
Reliable feedback (ACORN & Postcode)	845	21.4

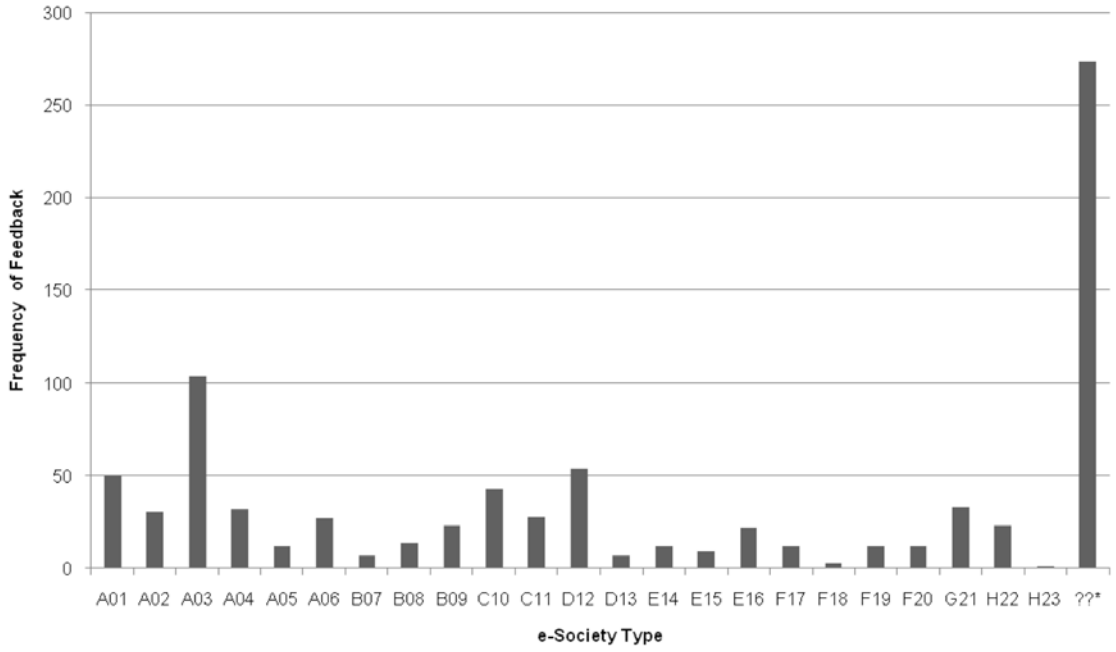

Figure 1: The frequency of original e-Society Types where valid user feedback was given

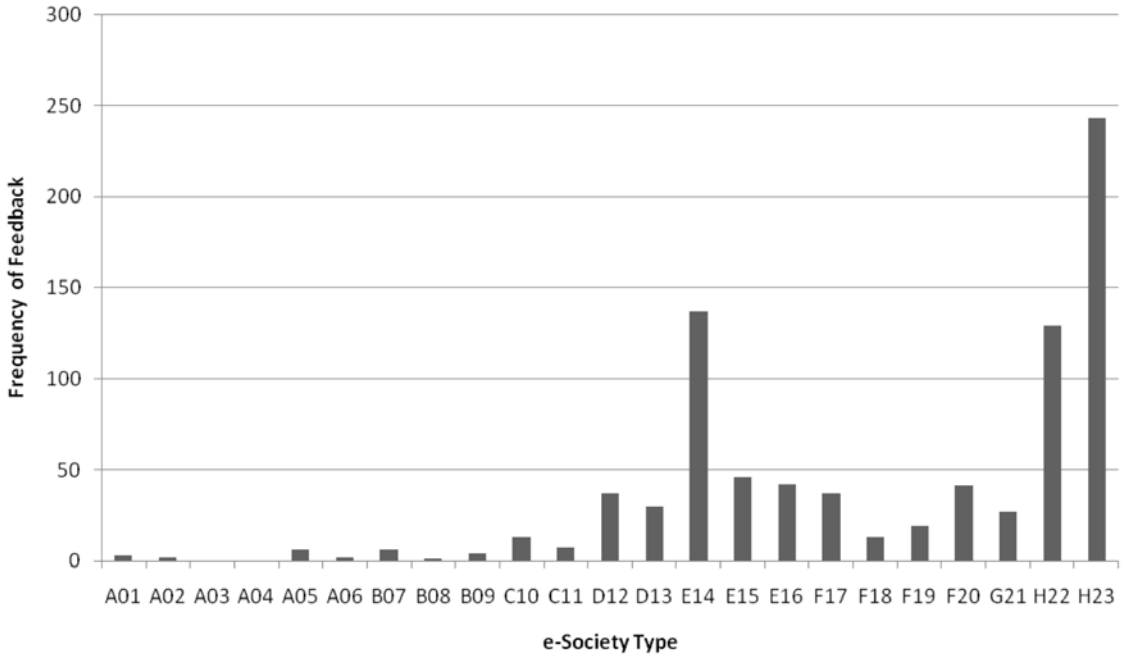

Figure 2: The new frequency of e-Society Types assignments where valid user feedback was given

Once the percentage of the successful feedback is compared against all feedback within each Postcode Area, the main region of successful feedback occurs in and around London (See Figure 3). This spatial clustering of successful feedback is interesting and may show a general awareness among the population in these areas of the type neighbourhood that they live within. However, two of the central Postcode Areas (EC and WC) show lower feedback success, as shown on the inset map of London in Figure 3. In these areas, the density of addresses related to businesses will be high, and after examining the rejected feedback it is found that in EC 46.7% and in WC 56.25% of the feedback in these Postcode Areas was rejected as being for predominantly non residential or business postcodes.

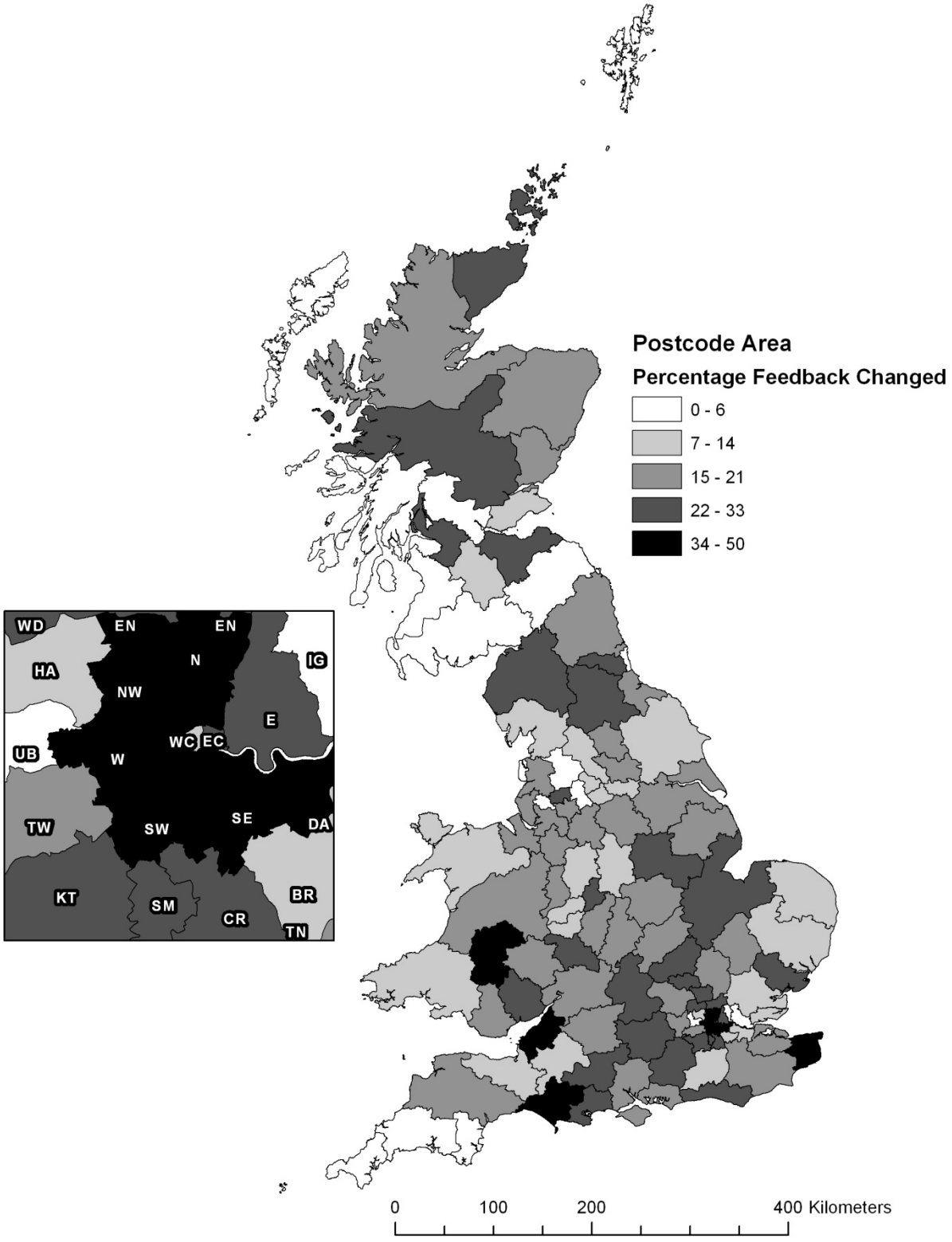

Figure 3: The percentage of the feedback successfully validated by Postal Area

In order to further investigate the underlying characteristics of the people who gave successfully validated feedback, a further set of index scores were calculated by Acorn Types. There appears to be an over

representation of those Types representing affluent neighbourhoods, and perhaps due to a higher level of education the people living in these areas made more considered feedback reassignments. This hypothesis is also supported by the overrepresentation of all Types within the Group “Educated Urbanites”, and also the Types “Student flats and cosmopolitan sharers” and “Student terraces”. Outside of these more affluent and highly educated neighbourhoods, the Types “Families and single parents, semis and terraces” and “Large families and single parents, many children” were also overrepresented.

Table 6: Weighted Index scores and counts of validated feedback by ACORN

ACORN Typology			Validated	
Categories	**Groups**	**Types**	**n**	**Index**
Wealthy Achievers	Wealthy Executives	Wealthy mature professionals, large houses	75	268
		Wealthy working families with mortgages	22	84
		Villages with wealthy commuters	41	143
		Well-off managers, larger houses	29	138
	Affluent Greys	Older affluent professionals	28	132
		Farming communities	18	88
		Old people, detached homes	22	86
		Mature couples, smaller detached homes	15	82
	Flourishing Families	Older families, prosperous suburbs	27	118
		Well-off working families with mortgages	17	86
		Well-off managers, detached houses	32	118
		Large families and houses in rural areas	0	0
Urban Prosperity	Prosperous Professionals	Well-off professionals, larger houses and converted flats	36	205
		Older professionals in suburban houses and apartments	1	4
	Educated Urbanites	Affluent urban professionals, flats	69	283
		Prosperous young professionals, flats	75	276
		Young educated workers, flats	39	231
		Multi-ethnic young, converted flats	25	217
		Suburban privately renting professionals	87	184
	Aspiring Singles	Student flats and cosmopolitan sharers	20	223
		Singles and sharers, multi-ethnic areas	3	33
		Low income singles, small rented flats	12	102
		Student terraces	5	260
Comfortably Off	Starting Out	Young couples, flats and terraces	9	117
		White-collar singles/sharers, terraces	13	35
	Secure Families	Younger white-collar couples with mortgages	13	45
		Middle income, home owning areas	18	78
		Working families with mortgages	4	38
		Mature families in suburban semis	21	81
		Established home owning workers	11	52
		Home owning Asian family areas	1	31
	Settled Suburbia	Retired home owners	1	14
		Middle income, older couples	8	33

		Lower incomes, older people, semis	N/A	N/A
	Prudent Pensioners	Elderly singles, purpose built flats	N/A	N/A
		Older people, flats	2	9
Moderate Means	Asian Communities	Crowded Asian terraces	0	-
		Low income Asian families	0	-
	Post-Industrial Families	Skilled older families, terraces	3	20
		Young working families	3	39
	Blue-Collar Roots	Skilled workers, semis and terraces	1	6
		Home owning families, terraces	2	22
		Older people, rented terraces	2	22
Hard-Pressed	Struggling Families	Low income larger families, semis	4	32
		Low income, older people, smaller semis	4	33
		Low income, routine jobs, terraces and flats	3	54
		Low income families, terraced estates	4	62
		Families and single parents, semis and terraces	7	126
		Large families and single parents, many children	4	134
	Burdened Singles	Single elderly people, council flats	1	13
		Single parents and pensioners, council terraces	1	22
		Families and single parents, council flats	3	88
	High-Rise Hardship	Old people, many high-rise flats	0	-
		Singles and single parents, high-rise estates	3	74
	Inner City Adversity	Multi-ethnic purpose built estates	1	18
		Multi-ethnic crowded flats	0	-

The pilot methodology outlined in this paper is not without limitation and is only presents a first tentative start towards updating and amendment of the classification. A general limitation of user generated feedback, and why heuristic reliability checks are so important, is that there may be a tendency for people to perceive areal classifications as predictions relating to individuals. Therefore, although the feedback may be appropriate for them personally, these assignments may nonetheless be inappropriate for the average characteristics of all those living people within their unit postcode. Indeed, this is also one of the core limitations of geodemographic classification which assign Types at an areal aggregate.

The methodology presented in this paper is a pilot and it could be refined. For example, it could be possible to use multiple geodemographic classification in the external validation procedure. However, in the example of the e-Society, we were limited to using just the postcode level Acorn because Experian data were included in the original classification and we wished to avoid circularity in our findings. Furthermore, where feedback is collected consistently over a longer period, it may be possible to weight reassignments by the frequency that changes are requested for particular postcodes. Further validation measures would require additional feedback

from the proposed Digital Inclusion site, plus E-Society codes at the level of the individual (ideally) or unit postcode breakdowns. Experian is the custodian of the tools required to create this information.

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