

CENSUS 2011

Data quality report



THE SOUTH AFRICA I KNOW, THE HOME I UNDERSTAND



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Census 2011

Data Quality Report

This report serves to communicate the processes that were followed to assess the quality of the Census 2011 data.

The data quality of variables was expressed by looking at imputation rates for each variable. As a standard, it is generally considered by the UN that any variable imputed for less than 10% of its cases is acceptable, and for less than 5% it is very good.

By means of definition, it is important to note that Logical edits refer to the validity and consistency checks that enable one to verify or correct for a value of a given variable by using other values in the same record. On the other hand, Dynamic imputation uses one or more variables to estimate the likely response when an unknown or invalid appears in the dataset. It is generally considered that logical edits are merely corrections of a variable based on information from the specific record and as such can't really be considered an imputation. Hot deck imputation does however produce a value for a missing or invalid value based on those from other records with similar characteristics and it is these that are the focus of this report.

It must be borne in mind that imputation rates for 2001 and 2011 are not directly comparable as a result of editing rules that are far more refined and thorough. Lessons learned from the editing process in 2001 have also been implemented in 2011. Nonetheless, the 2011 Census imputation rates are below the thresholds of 5% and 10% as expressed by the UN.

Table 1 shows the UN joint score into age-sex accuracy reporting. This is an index that evaluates the quality of the reporting of age and sex in a census. Any score below 20 is considered good quality, while a score from 20 to 40 is considered adequate, and one over 40 is of poor quality. As can be seen, quality is at its highest value since the inception of Census in South Africa's democratic dispensation. When looking at the index by population group, the coloured and white population groups have consistently reported age well whereas that of black Africans has been adequate. The Indian population group has shown a decline in the quality of its age and sex reporting.

It is also worthy of note that migration, general health and functioning, parental survival, income and fertility used no hot decks at all but only logical edits and also that industry and occupation is yet to be coded in the labour market sections

Table 1: UN joint score age-sex accuracy index

	1996	2001	2011
RSA	19,2	19,3	17,8
Black African	24,9	22,2	21,4
Coloured	16,0	15,2	15,9
Indian	15,4	17,0	23,1
White	13,2	17,3	13,4

Table 2 is a summary of all variables in 2011 that were dynamically imputed and what their corresponding rates in 2001 were. For a full list of variables see Annexure A – which is a detailed spreadsheet of all Census 2011 variables and their corresponding imputation rates for 2001.

Table 2: Summary of Imputation Rates for Census 2001 and 2011

Variable	Frequency	Percent 2011	Percent 2001
Age	569 572	1,3	0,3
Sex	689 091	1,6	0,3
Marital Status	1 697 652	3,8	2,2
Population Group	245 693	0,5	0,4
Language	161 534	0,4	0,3
Level of Education	2 714 193	6,2	5,2
Employment Status A	1 449 805	3,2	4,7
Employment Status B	1 449 805	3,3	17
Employment Status C	1 449 805	3,3	24,9
Looking for work	1 091 258	2,5	-
Liked to work	1 091 258	2,5	-
Reasons not working	941 088	2,1	4,7
Available to work	1 418 165	3,2	-
Employment Sector	2 014 399	4,6	-
Type of Main Dwelling	374 849	3	1,1
Roof Construction Material	1 252 892	10	-
Wall Construction Material	1 095 298	8,8	-
Dining Rooms	211 519	1,7	-
Living Rooms	211 519	1,7	-
Dining/Living Rooms	211 519	1,7	-
Bedrooms	211 519	1,7	-
Study Rooms	211 519	1,7	-
Multiple Use	77 907	0,6	-
Other Rooms	211 519	1,7	-
Total Rooms	77 907	0,6	1,8

Variable	Frequency	Percent 2011	Percent 2001
Tenureship Status	280 147	2,2	2,5
Estimate of Property Value	3 625 490	29,1	-
Age of Property	395 962	3,1	-
Piped Water	372 175	2,9	2,2
Source of Water	399 332	3,2	-
Reliability of Water Supply	321 707	2,5	-
Duration of water supply interruption	171 441	1,4	-
Toilet Facility	424 506	3,4	0,8
Energy for Cooking	340 495	2,7	0,8
Energy for Heating	455 579	3,6	0,6
Energy for Lighting	432 195	3,4	0,7
Refuse Removal	753 432	6,1	2,4
Washing Machine	434 341	3,5	-
Computer	467 093	3,8	1,4
Satellite Dish	475 273	3,8	-
Fridge	364 429	2,9	0,8
Stove	390 416	3,2	-
Vacuum	445 832	3,6	-
DVD Player	432 992	3,5	-
Motor Car	468 267	3,7	-
Television	447 387	3,5	0,7
Landline Telephone	539 422	4,3	0,9
Cellphone	433 361	3,5	1
Postbox	586 227	4,7	-
Residential Mail	517 413	4,2	-
Internet	109 803	0,9	-
Month of Death	10 565	2,1	3,1

Overall, 0,53% of all person variable cells, 3,7% of household cells and 0,04% of mortality cells were imputed.

In light of the above the following general quality statements can be expressed:

- Demographics – UN joint score is below 20 and imputations around these critical variables are within bounds of the experiences of other countries.
- Lifetime migration variables seem plausible. Analyses of these variables show consistency with what has been published before. Variables on lifetime migration can be used for analysis.
- General Health and Functioning – findings are plausible and of practical utility when applied to persons aged 5 and above.
- Parental survival - The data looks plausible. It is comparable with GHS 2011 and UN estimates.

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- Income was not imputed at all and trends are very consistent with IES data over the same period.
 - Education variables are plausible and of practical utility and further validity processes are ongoing with EMIS.
 - Labour market – Although the levels observed in census are different from that observed in the QLFS, the patterns are similar. Employment is under-reported in census and thus unemployment is overestimated, however it is considered that it is plausible and should be released.
 - Fertility – The fertility section is a very complex and sensitive section in the questionnaire. Issues that will need further attention include the fewer number of total children dead in the data set and the lower number of births obtained from births in the last twelve months. The impact of these lower numbers of births can become more pronounced at lower geographic levels, yielding unreliable estimates. We are of the view that these issues be addressed before releasing such.
 - Households – The variables are comparable across Census 1996, Census 2001, CS 2007, GHS 2011 and Census 2011. Provincial comparison of the Census 2011 data shows that the percentage household distributions for different variables agree with current/known provincial profiles. From the exploratory study of some key housing variables, we conclude that the data is fit for use.
 - Mortality – estimates of mortality are consistent and comparable with what is seen in administrative data and in the population register. Data is plausible for further analysis thereof.

Annexure A

PERSON		
VARIABLE	Frequency	Percent
F02_AGE		
Total	44 220 397	100
0 no imputation	34 916 859	79
1 logical imputation (from blank)	785 513	1,8
2 logical imputation (non-blank)	7 948 453	18
3 hot deck imputation (from blank)	425 847	1
4 hot deck imputation (non-blank)	143 725	0,3
F03_SEX		
Total	44 220 397	100
0 no imputation	43 223 110	97,7
1 logical imputation (from blank)	116 802	0,3
2 logical imputation (non-blank)	191 394	0,4
3 hot deck imputation (from blank)	662 111	1,5
4 hot deck imputation (non-blank)	26 980	0,1
P02_RELATIONSHIP		
Total	44 220 397	100
0 no imputation	41 457 347	93,8
1 logical imputation (from blank)	504 399	1,1
2 logical imputation (non-blank)	2 258 651	5,1
P03_MARITAL_STATUS		
Total	44 220 397	100
0 no imputation	39 432 115	89,2
1 logical imputation (from blank)	1 740 917	3,9
2 logical imputation (non-blank)	1 349 713	3,1
3 hot deck imputation (from blank)	1 638 672	3,7
4 hot deck imputation (non-blank)	58 980	0,1
P04_SPOUSE NUMBER		
Total	44 220 397	100
0 no imputation	38 747 223	87,6
1 logical imputation (from blank)	3 024 906	6,8
2 logical imputation (non-blank)	2 448 268	5,5
P05_POP_GROUP		
Total	44 220 397	100
0 no imputation	42 239 350	95,5
1 logical imputation (from blank)	1 644 633	3,7
2 logical imputation (non-blank)	90 721	0,2
3 hot deck imputation (from blank)	239 691	0,5
4 hot deck imputation (non-blank)	6 002	0,0

PERSON		
VARIABLE	Frequency	Percent
P06A_LANGUAGE		
Total	44 220 397	100
0 no imputation	41 630 267	94,1
1 logical imputation (from blank)	1 139 264	2,6
2 logical imputation (non-blank)	1 289 332	2,9
3 hot deck imputation blank	123 298	0,3
4 hot deck imputation (non-blank)	38 236	0,1
P06B_LANGUAGE		
Total	44 220 397	100
0 no imputation	38 566 490	87,2
1 logical imputation (from blank)	4 358 880	9,9
2 logical imputation (non-blank)	1 295 027	2,9
MIGRATION		
P07_PROVINCE OF POB		
no imputation	41 761 631	94,4
logical imputation (from blank)	397 257	0,9
logical imputation (non-blank)	2 061 509	4,7
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	44 220 397	100
P08_COUNTRYOFBIRTH		
no imputation	43 177 265	97,6
logical imputation (from blank)	121 197	0,3
logical imputation (non-blank)	921 935	2,1
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
Total	44 220 397	100
impute P08A_YEAR_MOVED		
no imputation	43 858 570	99,2
logical imputation (from blank)	52 907	0,1
logical imputation (non-blank)	308 920	0,7
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	44 220 397	100
P09_SA_CITIZENSHIP		
no imputation	42 793 801	96,8
logical imputation (from blank)	1 021 488	2,3
logical imputation (non-blank)	405 108	0,9
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	44 220 397	100

PERSON		
VARIABLE	Frequency	Percent
P10_USUAL RESIDENCE		
no imputation	41 301 851	93,4
logical imputation (from blank)	1 901 477	4,3
logical imputation (non-blank)	1 017 069	2,3
Total	44 220 397	100
P10A_USUALRESPROV		
no imputation	42 076 413	95,2
logical imputation (from blank)	1 032 561	2,3
logical imputation (non-blank)	1 111 423	2,5
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	44 220 397	100
P11_SINCE_2001		
no imputation	38 271 983	86,5
logical imputation (from blank)	1 432 694	3,2
logical imputation (non-blank)	4 515 720	10,2
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	44 220 397	
P11B_PREVRESPROV		
no imputation	42 142 038	95
logical imputation (from blank)	486 424	1
logical imputation (non-blank)	1 591 934	4
hot deck imputation (from blank)		
hot deck imputation (non-blank)		
Total	44 220 397	100
P11A_MONTH_MOVED		
no imputation	43 159 107	98
logical imputation (from blank)	353 763	1
logical imputation (non-blank)	707 526	1,6
Total	44 220 397	100
P11C_PREVRESMUNIC		
no imputation	42 274 700	95,6
logical imputation (from blank)	132 661	0,3
logical imputation (non-blank)	1 813 036	4,1
Total	44 220 397	100
P11D_PREVRESLOCAL		
no imputation	41 876 716	94,7
logical imputation (from blank)	1 857 257	4,2
logical imputation (non-blank)	486 424	1,1
Total	44 220 397	100

PERSON		
VARIABLE	Frequency	Percent
GENERAL HEALTH & FUNCTIONING		
SEEING		
no imputation	40 283 384	92,7
logical imputation (from blank)	1 410 501	3,2
logical imputation (non-blank)	1 758 563	4
Total	43 452 448	100
HEARING		
no imputation	40 285 134	92,7
logical imputation (from blank)	1 497 114	3,4
logical imputation (non-blank)	1 670 200	3,8
Total	43 452 448	100
COMMUNICATING		
no imputation	40 663 828	93,6
logical imputation (from blank)	1 593 221	3,7
logical imputation (non-blank)	1 195 399	2,8
Total	43 452 448	100
WALKING/CLIMBING		
no imputation	40 708 738	93,7
logical imputation (from blank)	1 459 772	3,4
logical imputation (non-blank)	1 283 938	3
Total	43 452 448	100
REMEMBERING		
no imputation	40 807 774	93,9
logical imputation (from blank)	1 515 170	3,5
logical imputation (non-blank)	1 129 504	2,6
Total	43 452 448	100
SELF_CARE		
no imputation	38 055 676	87,6
logical imputation (from blank)	1 663 430	3,8
logical imputation (non-blank)	3 733 342	8,6
Total	43 452 448	100
ASSISITIVE DEVICES		
GLASSES		
no imputation	41 779 206	96,1
logical imputation (from blank)	1 495 812	3,4
logical imputation (non-blank)	177 430	0,4
Total	43 452 448	100

PERSON		
VARIABLE	Frequency	Percent
HEARINGAID		
no imputation	41 684 051	95,9
logical imputation (from blank)	1 601 595	3,7
logical imputation (non-blank)	166 802	0,4
Total	43 452 448	100
WALKINGSTICK		
no imputation	41 693 152	96
logical imputation (from blank)	1 601 751	3,7
logical imputation (non-blank)	157 545	0,4
Total	43 452 448	100
WHEELCHAIR		
no imputation	41 581 070	95,7
logical imputation (from blank)	1 656 520	3,8
logical imputation (non-blank)	214 858	0,5
Total	43 452 448	100
CHRONIC MEDICATION		
no imputation	41 698 578	96
logical imputation (from blank)	1 613 466	3,7
logical imputation (non-blank)	140 404	0,3
Total	43 452 448	100
PARENTAL SURVIVAL & INCOME		
P14_MOTHERALIVE		
no imputation	43 258 209	97,8
logical imputation (from blank)	304 141	0,7
logical imputation (non-blank)	658 047	1,5
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	44 220 397	100
P14A_MOTHERPNR		
no imputation	37 170 450	84,1
logical imputation (from blank)	2 714 585	6,1
logical imputation (non-blank)	4 335 362	9,8
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	44 220 397	100
P15_FATHERALIVE		
no imputation	42 711 908	96,6
logical imputation (from blank)	692 601	1,6
logical imputation (non-blank)	815 888	1,8
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	44 220 397	100

PERSON		
VARIABLE	Frequency	Percent
P15A_FATHERPNR		
no imputation	41 528 035	93,9
logical imputation (from blank)	760 201	1,7
logical imputation (non-blank)	1 932 161	4,4
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	44 220 397	100
P16_INCOME		
no imputation	44 220 397	100
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	44 220 397	100
EDUCATION		
P17_SCHOOL ATTEND		
no imputation	40 515 694	91,6
logical imputation (from blank)	169 560	0,4
logical imputation (non-blank)	3 535 143	8
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	44 220 397	100
P18_EDU INSTITUTION		
no imputation	41 438 062	93,7
logical imputation (from blank)		0
logical imputation (non-blank)	1 022 046	2,3
hot deck imputation (from blank)	709 474	1,6
hot deck imputation (non-blank)	1 050 815	2,4
Total	44 220 397	100
P19_EDU PUB OR PRIV		
no imputation	42 361 094	95,8
logical imputation (from blank)	1 001 849	2,3
logical imputation (non-blank)	857 454	1,9
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	44 220 397	100

PERSON		
VARIABLE	Frequency	Percent
P20_EDU LEVEL		
no imputation	40 437 665	91,4
logical imputation (from blank)	0	0
logical imputation (non-blank)	1 068 539	2,4
hot deck imputation (from blank)	1 837 541	4,2
hot deck imputation (non-blank)	876 652	2
Total	44 220 397	100
P21_EDUC FIELD		
no imputation	42 949 637	97,1
logical imputation (from blank)	17	4E-05
logical imputation (non-blank)	1 270 743	2,9
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	44 220 397	100
EMPLOYMENT		
P23A_EMPLOYMENTSTATUS		
no imputation	29 365 407	66,4
logical imputation (from blank)	312 073	0,7
logical imputation (non-blank)	13 093 112	29,6
hot deck imputation (from blank)	905 407	2
hot deck imputation (non-blank)	544 398	1,2
Total	44 220 397	100
impute P23B_EMPLOYMENTSTATUS		
no imputation	26 781 729	60,6
logical imputation (from blank)	2 894 455	6,5
logical imputation (non-blank)	13 094 408	29,6
hot deck imputation (from blank)	1 007 030	2,3
hot deck imputation (non-blank)	442 775	1
Undefined		0
Total	44 220 397	100
impute P23C_EMPLOYMENTSTATUS		
no imputation	26 260 547	59,4
logical imputation (from blank)	3 422 611	7,7
logical imputation (non-blank)	13 087 434	29,6
hot deck imputation (from blank)	1 058 852	2,4
hot deck imputation (non-blank)	390 953	0,9
Undefined		0
Total	44 220 397	100

PERSON		
VARIABLE	Frequency	Percent
impute P25_UNEMPLOYMENT		
no imputation	26 962 714	61
logical imputation (from blank)	399 667	0,9
logical imputation (non-blank)	15 766 758	35,7
hot deck imputation (from blank)	1 091 258	2,5
hot deck imputation (non-blank)		0
Total	44 220 397	100
impute P26_UNEMPLOYMENT		
no imputation	26 255 816	59,4
logical imputation (from blank)	371 442	0,8
logical imputation (non-blank)	16 501 881	37,3
hot deck imputation (from blank)	1 091 258	2,5
hot deck imputation (non-blank)		0
Total	44 220 397	100
P27_REASONSNOTWORKING		
no imputation	23 984 375	54,2
logical imputation (from blank)	257 073	0,6
logical imputation (non-blank)	19 037 861	43,1
hot deck imputation (from blank)	941 088	2,1
hot deck imputation (non-blank)		0
Total	44 220 397	100
P28_WORKAVAILABILITY		
no imputation	24 498 724	55,4
logical imputation (from blank)		0
logical imputation (non-blank)	18 303 508	41,4
hot deck imputation (from blank)	1 418 165	3,2
hot deck imputation (non-blank)		0
Total	44 220 397	100
P31_SECTOR		
no imputation	29 128 686	65,9
logical imputation (from blank)		0
logical imputation (non-blank)	13 077 312	29,6
hot deck imputation (from blank)	2 014 399	4,6
hot deck imputation (non-blank)		0
Total	44 220 397	100

PERSON		
VARIABLE	Frequency	Percent
FERTILITY		
P32_CHILDEVERBORN		
Total	44 220 397	100
no imputation	10 802 372	24,4
logical imputation (from blank)	197 300	0,4
logical imputation (non-blank)	33 220 725	75,1
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
P33_AGE AT FIRST BIRTH		
Total	44 220 397	100
no imputation	36 603 259	82,8
logical imputation (from blank)	4 921 720	11,1
logical imputation (non-blank)	2 695 418	6,1
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
P34_CHILDBORNBOYS		
Total	44 220 397	100
no imputation	42 597 524	96,3
logical imputation (from blank)	584 231	1,3
logical imputation (non-blank)	1 038 642	2,3
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
P34_CHILDBORNGIRLS		
Total	44 220 397	100
no imputation	42 724 671	96,6
logical imputation (from blank)	585 229	1,3
logical imputation (non-blank)	910 497	2,1
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
P34_CHILDBORNTOT		
Total	44 220 397	100
no imputation	42 410 957	95,9
logical imputation (from blank)	584 959	1,3
logical imputation (non-blank)	1 224 481	2,8
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0

PERSON		
VARIABLE	Frequency	Percent
P35_CHILDLIVINGBOYS		
Total	44 220 397	100
no imputation	42 772 475	96,7
logical imputation (from blank)	581 095	1,3
logical imputation (non-blank)	866 827	2
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
P35_CHILDLIVINGGIRLS		
Total	44 220 397	100
no imputation	42 691 598	96,5
logical imputation (from blank)	580 789	1,3
logical imputation (non-blank)	948 010	2,1
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
P35_CHILDLIVINGTOT		
Total	44 220 397	100
no imputation	42 236 663	95,5
logical imputation (from blank)	580 330	1,3
logical imputation (non-blank)	1 403 404	3,2
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	0	0
Undefined	0	0
impute P36CHILDLIVEELSEBOYS		
Total	44 220 397	100
no imputation	43 243 897	97,8
logical imputation (from blank)	63 945	0,1
logical imputation (non-blank)	912 555	2,1
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
impute P36CHILDLIVEELSEGIRLS		
Total	44 220 397	100
no imputation	43 248 825	97,8
logical imputation (from blank)	64 357	0,1
logical imputation (non-blank)	907 215	2,1
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
P36_CHILDLIVEELSETOT		
Total	44 220 397	100
no imputation	42 984 027	97,2
logical imputation (from blank)	64 802	0,1
logical imputation (non-blank)	1 171 568	2,6
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0

PERSON		
VARIABLE	Frequency	Percent
P37_CHILDNOTALIVEBOYS		
Total	44 220 397	100
no imputation	43 347 633	98
logical imputation (from blank)	60 216	0,1
logical imputation (non-blank)	812 548	1,8
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
P37_CHILDNOTALIVEGIRLS		
Total	44 220 397	100
no imputation	43 354 585	98
logical imputation (from blank)	60 259	0,1
logical imputation (non-blank)	805 553	1,8
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
P37CHILDNOTALIVETOT		
Total	44 220 397	100
no imputation	13 984 743	31,6
logical imputation (from blank)	62 476	0,1
logical imputation (non-blank)	30 173 178	68,2
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
P38LASTCHILDDOB		
Total	44 220 397	100
no imputation	44 220 397	100
logical imputation (from blank)	0	0
logical imputation (non-blank)	0	0
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
P38_LASTCHILDDAY		
Total	44 220 397	100
no imputation	39 101 450	88,4
logical imputation (from blank)	39 660	0,1
logical imputation (non-blank)	796 794	1,8
hot deck imputation (from blank)	4 210 570	9,5
hot deck imputation (non-blank)	71 923	0,2

PERSON		
VARIABLE	Frequency	Percent
P38LASTCHILDMO		
Total	44 220 397	100
no imputation	43 373 172	98,1
logical imputation (from blank)	56 213	0,1
logical imputation (non-blank)	791 012	1,8
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
P38 LASTCHILDYR		
Total	44 220 397	100
no imputation	43 333 880	98
logical imputation (from blank)	57 447	0,1
logical imputation (non-blank)	829 070	1,9
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
P39_LASTCHILDSX		
Total	44 220 397	100
no imputation	43 031 994	97,3
logical imputation (from blank)	62 751	0,1
logical imputation (non-blank)	1 125 652	2,5
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
P40_LASTCHILDALIVE		
Total	44 220 397	100
no imputation	43 012 321	97,3
logical imputation (from blank)	61 323	0,1
logical imputation (non-blank)	1 146 753	2,6
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
P41_LASTCHILDDOD		
Total	44 220 397	100
no imputation	44 220 397	100
logical imputation (from blank)		0
logical imputation (non-blank)	0	0
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0

PERSON		
VARIABLE	Frequency	Percent
P41LASTCHILDDAY		
Total	44 220 397	100
no imputation	41 854 762	94,7
logical imputation (from blank)	2 278 719	5,2
logical imputation (non-blank)	86 916	0,2
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
P41LASTCHILDMO		
Total	44 220 397	100
no imputation	44 130 444	99,8
logical imputation (from blank)	3 788 *	
logical imputation (non-blank)	86 165	0,2
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
P41LASTCHILDYR		
Total	44 220 397	100
no imputation	44 117 184	99,8
logical imputation (from blank)	4 068 *	
logical imputation (non-blank)	99 145	0,2
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
H01_QUARTERS		
Total	12 485 290	100
no imputation	11 809 361	94,6
logical imputation (from blank)	27 836	0,2
logical imputation (non-blank)	589 036	4,7
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
H02_MAINDWELLING		
Total	12 485 290	100
no imputation	12 029 248	96,3
logical imputation (from blank)	17 441	0,1
logical imputation (non-blank)	4 695	0,1
hot deck imputation (from blank)	239 211	1,9
hot deck imputation (non-blank)	135 638	1,1

PERSON		
VARIABLE	Frequency	Percent
H02_OTHERDWELLING		
Total	12 485 290	100
no imputation	4 538 919	36,4
logical imputation (from blank)		0
logical imputation (non-blank)	7 887 314	63,2
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined	59 057	0,5
H02_ROOF CONSTRUCTION MATERIAL		
Total	12 485 290	100
no imputation	11 173 341	89,5
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	141 709	1,1
hot deck imputation (non-blank)	1 111 183	8,9
Undefined	59 057	0,5
H02_WALL CONSTRUCTION MATERIAL		
Total	12 485 290	100
no imputation	11 018 621	88,3
logical imputation (from blank)	182 416	1,5
logical imputation (non-blank)	129 898	1
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	1 095 298	8,8
Undefined	59 057	0,5
H03_DININGROOMS		
Total	12 485 290	100
no imputation	10 713 591	85,8
logical imputation (from blank)	1 304 568	10,4
logical imputation (non-blank)	196 555	1,6
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	211 519	1,7
Undefined	59 057	0,5
H03_LIVINGROOMS		
Total	12 485 290	100
no imputation	10 509 132	84,2
logical imputation (from blank)	1 484 746	11,9
logical imputation (non-blank)	220 836	1,8
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	211 519	1,7
Undefined	59 057	0,5

PERSON		
VARIABLE	Frequency	Percent
H03_DINING/LIVING		
Total	12 485 290	100
no imputation	10 196 498	81,7
logical imputation (from blank)	1 813 730	14,5
logical imputation (non-blank)	204 486	1,6
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	211 519	1,7
Undefined	59 057	0,5
impute H03_BEDROOMS		
Total	12 485 290	100
no imputation	10 758 518	86,2
logical imputation (from blank)	516 753	4,1
logical imputation (non-blank)	939 443	7,5
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	211 519	1,7
Undefined	59 057	0,5
H03_STUDYROOMS		
Total	12 485 290	100
no imputation	9 629 313	77,1
logical imputation (from blank)	1 969 848	15,8
logical imputation (non-blank)	615 553	4,9
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	211 519	1,7
Undefined	59 057	0,5
H03_MULTIPLEUSE		
Total	12 485 290	100
no imputation	3 531 763	28,3
logical imputation (from blank)		0
logical imputation (non-blank)	8 816 563	70,6
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	77 907	0,6
Undefined	59 057	0,5
H03_OTHERROOMS		
Total	12 485 290	100
no imputation	9 913 058	79,4
logical imputation (from blank)	1 843 212	14,8
logical imputation (non-blank)	458 444	3,7
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	211 519	1,7
Undefined	59 057	0,5

PERSON		
VARIABLE	Frequency	Percent
H03_TOTROOMS		
Total	12 485 290	100
no imputation	3 029 831	24,3
logical imputation (from blank)	54 366	0,4
logical imputation (non-blank)	9 264 129	74,2
hot deck imputation (from blank)		0
hot deck imputation (non-blank)	77 907	0,6
Undefined	59 057	0,5
H04_TENURE		
Total	12 485 290	100
no imputation	12 146 086	97,3
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	187 571	1,5
hot deck imputation (non-blank)	92 576	0,7
Undefined	59 057	0,5
H05_ESTPROPERTYVAL		
	Frequency	Percent
Total	12 485 290	100
no imputation	8 794 311	70,4
logical imputation (from blank)		0
logical imputation (non-blank)	6 432	0,1
hot deck imputation (from blank)	318 779	2,6
hot deck imputation (non-blank)	3 306 711	26,5
Undefined	59 057	0,5
H06_PROPERTYAGE		
	Total	Percent
Total	12 485 290	100
no imputation	12 026 331	96,3
logical imputation (from blank)		0
logical imputation (non-blank)	3 940	0,1
hot deck imputation (from blank)	229 683	1,8
hot deck imputation (non-blank)	166 279	1,3
Undefined	59 057	0,5
H07_WATERPIPED		
	Total	Percent
Total	12 485 290	100
no imputation	12 054 058	96,5
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	280 717	2,2
hot deck imputation (non-blank)	91 458	0,7
Undefined	59 057	0,5

PERSON		
VARIABLE	Frequency	Percent
H08_WATERSOURCE	Total	Percent
Total	12 485 290	100
no imputation	12 026 901	96,3
logical imputation (from blank)	0	0
logical imputation (non-blank)	0	0
hot deck imputation (from blank)	326 154	2,6
hot deck imputation (non-blank)	73 178	0,6
Undefined	59 057	0,5
H09_WATERSUPPLY	Total	Percent
Total	12 485 290	100
no imputation	11 597 825	92,9
logical imputation (from blank)		0
logical imputation (non-blank)	506 701	4,1
hot deck imputation (from blank)	266 644	2,1
hot deck imputation (non-blank)	55 063	0,4
Undefined	59 057	0,5
H09A_WATERSUPPLY	Total	Percent
Total	12 485 290	100
no imputation	11 142 315	89,2
logical imputation (from blank)		0
logical imputation (non-blank)	1 112 477	8,9
hot deck imputation (from blank)	152 171	1,2
hot deck imputation (non-blank)	19 270	0,2
Undefined	59 057	0,5
H09B_WATERSOURCE	Total	Percent
Total	12 485 290	100
no imputation	11 347 249	90,9
logical imputation (from blank)		0
logical imputation (non-blank)	1 078 984	8,6
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined	59 057	0,5
H10_TOILETFACILITY	Total	Percent
Total	12485290	100
no imputation	12001727	96,1
logical imputation (from blank)	0	0
logical imputation (non-blank)	0	0
hot deck imputation (from blank)	326 639	2,6
hot deck imputation (non-blank)	97 867	0,8
Undefined	59 057	0,5

PERSON		
VARIABLE	Frequency	Percent
H11_ENERGYCOOKING	Total	Percent
no imputation	12 046 683	96,5
logical imputation (from blank)	20 286	0,2
logical imputation (non-blank)	18 769	0,2
hot deck imputation (from blank)	227 708	1,8
hot deck imputation (non-blank)	112 787	0,9
Undefined	59 057	0,5
Total	12 485 290	100
H11_ENERGYHEATING	Total	Percent
no imputation	11 968 679	95,9
logical imputation (from blank)		0
logical imputation (non-blank)	1 975 *	
hot deck imputation (from blank)	303 928	2,4
hot deck imputation (non-blank)	151 651	1,2
Undefined	59 057	0,5
Total	12 485 290	100
H11_ENERGYLIGHTING	Total	Percent
no imputation	11 986 789	96
logical imputation (from blank)		0
logical imputation (non-blank)	7 249	0,1
hot deck imputation (from blank)	276 522	2,2
hot deck imputation (non-blank)	155 673	1,2
Undefined	59 057	0,5
Total	12 485 290	100
H12_REFUSE	Total	Percent
no imputation	11 672 801	93,5
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	659 444	5,3
hot deck imputation (non-blank)	93 988	0,8
Undefined	59 057	0,5
Total	12 485 290	100
H13_WASHINGM	Total	Percent
no imputation	11 991 892	96
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	257 233	2,1
hot deck imputation (non-blank)	177 108	1,4
Undefined	59 057	0,5
Total	12 485 290	100

PERSON		
VARIABLE	Frequency	Percent
H13_COMPUTER	Total	Percent
no imputation	11 959 140	95,8
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	285 442	2,3
hot deck imputation (non-blank)	181 651	1,5
Undefined	59 057	0,5
Total	12 485 290	100
impute H13_SATELLITE	Total	Percent
no imputation	11 950 960	95,7
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	291 215	2,3
hot deck imputation (non-blank)	184 058	1,5
Undefined	59 057	0,5
Total	12 485 290	100
H13_REFRIDGERATOR	Total	Percent
no imputation	12 061 804	96,6
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	228 263	1,8
hot deck imputation (non-blank)	136 166	1,1
Undefined	59 057	0,5
Total	12 485 290	100
H13_STOVE	Total	Percent
no imputation	12 035 817	96,4
logical imputation (from blank)	0	0
logical imputation (non-blank)	0	0
hot deck imputation (from blank)	245 054	2
hot deck imputation (non-blank)	145 362	1,2
Undefined	59 057	0,5
Total	12 485 290	100
H13_VACUUM	Total	Percent
no imputation	11 980 401	96
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	269 370	2,2
hot deck imputation (non-blank)	176 462	1,4
Undefined	59 057	0,5
Total	12 485 290	100

PERSON		
VARIABLE	Frequency	Percent
H13_DVD_PLAYER	Total	Percent
no imputation	11 993 241	96,1
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	273 099	2,2
hot deck imputation (non-blank)	159 893	1,3
Undefined	59 057	0,5
Total	12 485 290	100
	Frequency	
H13_MOTORCAR	Total	Percent
no imputation	11 957 966	95,8
logical imputation (from blank)	0	0
logical imputation (non-blank)	0	0
hot deck imputation (from blank)	291 632	2,3
hot deck imputation (non-blank)	176 635	1,4
Undefined	59 057	0,5
Total	12 485 290	100
	Total	Percent
H13_TV	Total	Percent
no imputation	11 978 846	95,9
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	293 069	2,3
hot deck imputation (non-blank)	154 318	1,2
Undefined	59 057	0,5
Total	12 485 290	100
	Total	Percent
H13_LANDLINE	Total	Percent
no imputation	11 886 811	95,2
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	348 394	2,8
hot deck imputation (non-blank)	191 028	1,5
Undefined	59 057	0,5
Total	12 485 290	100
	Total	Percent
impute H13_CELLPHONE	Total	Percent
no imputation	11 992 872	96,1
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	282 791	2,3
hot deck imputation (non-blank)	150 570	1,2
Undefined	59 057	0,5
Total	12 485 290	100

PERSON		
VARIABLE	Frequency	Percent
H13_POSTBOX	Total	Percent
no imputation	11 840 006	94,8
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	385 861	3,1
hot deck imputation (non-blank)	200 366	1,6
Undefined	59 057	0,5
Total	12 485 290	100
H13_RESIDENTIALMAIL	Total	Percent
no imputation	11 908 820	95,4
logical imputation (from blank)		0
logical imputation (non-blank)		0
hot deck imputation (from blank)	335 598	2,7
hot deck imputation (non-blank)	181 815	1,5
Undefined	59 057	0,5
Total	12 485 290	100
H13A_INTERNET	Total	Percent
no imputation	11 642 174	93,2
logical imputation (from blank)	656 316	5,3
logical imputation (non-blank)	17 940	0,1
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	109 803	0,9
Undefined	59 057	0,5
Total	12 485 290	100
MORTALITY		
DEATHOCCURED		
no imputation	12 075 891	95,6
logical imputation (from blank)	445 477	3,5
logical imputation (non-blank)	104 990	0,8
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	12 626 358	100
NUMBER OF DEATHS		
no imputation	421 289	3,3
logical imputation (from blank)	186 213	1,5
logical imputation (non-blank)	12 018 856	95,2
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Total	12 626 358	100

PERSON		
VARIABLE	Frequency	Percent
M02_MONTH OF DEATH		
no imputation	452 575	87,4
logical imputation (from blank)		0
logical imputation (non-blank)	54 862	10,6
hot deck imputation (from blank)	5 489	1,1
hot deck imputation (non-blank)	5 076	1
Undefined		0
Total	518 002	100
M02_YEAR OF DEATH		
no imputation	459 773	88,8
logical imputation (from blank)	3 367	0,6
logical imputation (non-blank)	54 862	10,6
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	518 002	100
M03_SEX		
no imputation	454 921	87,8
logical imputation (from blank)	615	0,1
logical imputation (non-blank)	62 466	12,1
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
Undefined	0	0
Total	518 002	100
M04_AGE		
no imputation	400 590	77,3
logical imputation (from blank)	139	0,026833873
logical imputation (non-blank)	117 273	22,6
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	518 002	100
M05_CAUSE OF DEATH		
no imputation	451 033	87,1
logical imputation (from blank)		0
logical imputation (non-blank)	66 969	12,9
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
Undefined	0	0
Total	518 002	100

PERSON		
VARIABLE	Frequency	Percent
M06_PREGNANCY	Total	Percent
no imputation	313 691	60,6
logical imputation (from blank)	119	0,0
logical imputation (non-blank)	204 192	39,4
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	518 002	100
M07_BIRTH	Total	Percent
no imputation	315 981	61
logical imputation (from blank)	93	0,02
logical imputation (non-blank)	201 928	39
hot deck imputation (from blank)	0	0
hot deck imputation (non-blank)	0	0
Undefined	0	0
Total	518 002	100
M08_POSTNATAL	Total	Percent
no imputation	326 084	63
logical imputation (from blank)		0
logical imputation (non-blank)	191 918	37
hot deck imputation (from blank)		0
hot deck imputation (non-blank)		0
Undefined		0
Total	518 002	100