Pakistan's Population Size and Growth in the Light of the 1972 Census Evaluation Survey

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Introduction

The focus of this article is on the population size of Pakistan during the census year 1972, and such estimates of population growth as might be consistent with the population size.[1] The 1972 Census Evaluation Survey (CES) was not concerned directly with estimates of these two parameters, but rather with the quality of the census data within their various aspects. Nevertheless, some of the data collected by CES throw light on population size and growth in Pakistan in 1972 and it is the purpose of this paper to extract and present analytically these data. It will be noted that such a presentation is made independently of and actually, at the time of writing, in the absence of final results for 1972.[2] When the detailed results become available, it will be a matter for further analysis whether and how the conclusions of this article will have to be changed.

The Underenumeration during the 1961 Census and Implications for the 1972 Analysis

There was general agreement among those who investigated the matter closely that the population of Pakistan (both East and West) was under-enumerated in the 1961 Census to the extent of 8 or 9 million persons (Table 1). The

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[1]This article is a summarized and amended part of a paper presented by the author to a census seminar on *Issues in Demographic Data Collection in Pakistan*, Rawalpindi, 11-13 August, 1975 and to be published in the seminar proceedings by the Census Commissioner. Further detailed reference must be made to the original paper [12].

[2]Even though totals by sex and districts have been published early [16], a complete demographic analysis requires other details, particularly distributions by age and sex, which have not yet been published.

estimates for West Pakistan varied from 4,972 million [21, p. 16) and 3,950 millon [11] to 3.222 million [19]. A thorough analytic and comparative study of these different estimates requires a separate paper. For present purposes, it is enough to say that they depend on demographic analysis of internal consistencies within the 1961 Census and consistencies in comparison with the 1951 Census. When the 1972 age distributions become available, a new powerful source will open for further analytic work.[3]   These analytic techniques generally depend on age-and-sex specific irregularities and are incapable by and large of detecting large scale under-enumerations or over-enumerations, when whole chunks of population are omitted or duplicated.

Thus, we can search with the aid of the same techniques in the 1972 age distributions whether 1951 and 1961 in idiosyncrasies were repeated or became less or more important. Different techniques are needed to discover whether new areas were brought into the census or not (or dropped out of it) or new (perhaps artificially created) whole populations, with no age-sex selectivity, were counted.

Whatever the actual outcome of an analysis, the important thing to realize is that the inter-censal *reported* change is a true indicator of actual population change only if both censuses were conducted equally well (or badly). If there has been an improvement in completeness then part of the *reported* increase is due to the improvement in completeness. If on the other hand there has been a deterioration in completeness then the *reported* increase is less than the actual increase. It is only if the two censuses have been conducted equally badly or equally well, that the *reported* increase represents the actual increase.

First Reactions to the Reported 1972 Census Total

The reported total of 64,892 million surprised everybody and the implied inter-censal (compound) rate of growth at 3.5 percent per annum from the reported total of 42,978 million in 1961 is difficult to accept. It destroys such faith as we might have had in the national family planning programme. It will make the traditional balancing of books of the current and next five-year plan a somewhat cheerless task.

Two demographic attitudes towards the total of 65 million have already been reported. According to one, it must be an over-enumeration, especially if one takes into consideration the large-scale emigration of Pakistanis, the effectiveness of family planning programmes, and the inability of health programmes to achieve planned declines in mortality [4]. For all we know, at the moment, the conclusion may be correct but coming after 17 lines of analysis, it is impossible to say.[4] Emigration being not massive enough to make a difference, family planning did not yet show effectiveness outside its own self-evaluation, and (though least certainly) mortality improvements might have been taking place independently of the health programmes. On the other hand, there is doubt whether there was motivation enough to over-report, to do the job of raising the population to 65 million.

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[3]The 1961-72 analysis will be subject to the difficulty that the two age distributions are 11 years and 8 months apart instead of the classical 10 years. However, there are ways of going around such a difficulty [13, 23].

[4]An analysis of the 1961 census took 17 pages to clear the ground alone, before serious discussion could even begin [11].

Table 1

Adjustments made to the 1961 Age distribution of Pakistan Population by Various writers (in thousands)

Nature of Adjustment	Krotki, 1963 p.296	Haq, 1964	Brackett & Akers, 1965 (19)	Pak. Census Org., 1961 (CB 7)	Bean et al. 1968 p.43	Pak. Techn. S-Com. 1968	Shaw, 1970 p.16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Adjusted 1961 grand total	46,928	46,200	46,200	42,978[4]	45,753[9]	46,200[12]	48,396[11]
Additions to both sexes	3,950	3,222[1]	3,222	0	2,775	3,322	5,418
Additions to males	1,300	936	358	−53	763	906	1,952
Additions to females	2,650	2,286	2,865	53	2,012	2,416	3,467
Males 0 — 4	750	700	770	298	763	762	872
5 — 9	—	−200	−315	−643	−266	−219	−238
10 — 14	150	200	256	235	266	220	589
15 — 19	400	150	−89	84	—	6	346
20 — 24	—	—	−75	94	—	153	313
25 — 29	—	—	−49	−99	—	6	71
30 — 34	—	—	−15	−24	30	−6	92
35 — 39	—	—	−8	23	51	6	85
40 — 44	—	—	−59	−38	−28	−1	−5
45 — 49	—	—	15	56	70	—	54
50 — 54	—	—	−118	−93	−115	−138	−75
55 +	—	—	145[6]	93[5]	193[7]	139[13]	195[10]

—Continued

Table 1—(Continued)

Nature of Adjustment	Krotki, 1963 p.296	Haq, 1964	Brackett & Akers, 1965 (19)	Pak. Census Org., 1961 (CB 7)	Bean et al. 1968 p.43	Pak. Techn. S-Com. 1968	Shaw, 1970 p.16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Females							
0 — 4	850	650	774	374	739	688	778
5 — 9	450	250	46	-226	-21[8]	270	8
10 — 14	400	600	537	191	500[8]	641	811
15 — 19	450	300	112	124	172	323	500
20 — 24	500	250	5	-46	71	275	360
25 — 29	—	150	-13	-230	12	47	77
30 — 34	—	172[2]	11	-77	49	63	110
35 — 39	—	—	62	45	110	58	160
40 — 44	—	—	24	-31	39	34	81
45 — 49	—	—	120	53	145	31	164
50 — 54	—	—	70	-61	4	90	76
55+	—	—	224[9]	68[5]	216[7]	88[13]	265[10]
Additions to both sexes for whole pre-1972 Pakistan	8,330	7,700	8,900[3]	0	5,383	7,700	9,592

1 "The minimum estimated for underenumeration" in Haq, 1964 [19].
2 An arithmetical error not alloted to any age group and distributed evenly between sexes.
3 This result of demographic analysis has actually been cut by 1.2 million to conform to the "official" guestimate of 7.7 millon in Haq, 1964.
4 To the totals stated on p. 66,98,000 were added for non-Pakistanis and distributed proportionately between age- and sex- groups.
5 This age distribution (Pak. Census Org., 1961 (CB7)) has for ages 60+, —40 males and—17 females [15].
6 This age distribution (Brackett and Akers, 1965) has for ages 60+: —453 males and—25 females [6].
7 This age distribution (Bean et al., 1968) has for ages 60+ the following adjustments: —36, 7, —173 males and 57,32, —114 females [5].
8 But on p. 39 of Bean et al., 1968, —160 and +160 are suggested on account of the labour force question alone.
9 To the 39,442 in Bean et al., 1968 p. 43, an allowance for tribal areas and non-Pakistanis has been added of 3,530.
10 This age distribution (Shaw,1970) has for ages 60+, —1341 males and 87 females [21].
11 To the 44,414 in Shaw, 1970: 16, an allowance for tribal areas and non-Pakistanis has been added of 3,982.
12 The mid-1960 estimate in the Pak. Techn. S-Comm., 1968, has been forwarded to January, 1961, by the addition of 1.4 per cent [20].
13 This age distribution (Pak. Techn. S-Comm., 1968) has for ages 60+, —16 males and —12 females.

According to the other demographic opinion, the 65 million are under-enumerated [1, 2; p. 4-8]. The author of such opinion arrives at this conclusion by finding that, out of the twenty or so population projections that have been calculated for Pakistan at various times, two or three are actually slightly higher than the census-reported 65 million. Thus, 65 million is not impossible; actually, for a number of other minor reasons, it must be under-enumerated.[*] For all we know, this might also be true, like the over enumeration idea, but both cannot be true at the same time. The unravelling of these possibilities will require a separate paper. A critical evaluation of the 1972 CES can make a substantial contribution towards this end and has been offered elsewhere [12].

The Total Population of Pakistan in the Light of CES

A comparison of the census results with the results implied by the CES report is presented in Table 2. The table takes seriously the CES estimate of census under-enumeration of 6.3 per cent in the CES universe and assumes that the same under-enumeration prevailed in the parts of Pakistan outside the CES universe (tribal areas and institutions).

The table then takes seriously the reported sampling fractions and applies their reciprocals as raising factors (RF) to the sample population. After allowing for the tribes and institutions, we are left with the summary statement that the CES omitted the equivalent of 8.1 million people, while the census omitted 4.4 million. In itself, this is not a startling result, because generally censuses do manage to obtain fuller completeness than surveys (national enthusism, superior organisation, less "slippage" of the sampling type, 100 per cent sampling frame, etc., are some of the reasons).

How far does the omission of 8.1 million persons or 12 per cent affect the other results of the CES? Let it be said immediately that even if it did, the CES would still be worth having, subject to checks of consistency with all pieces of data that may be available. The other immediate answer is the eventual answer of many survey-takes: "even if we failed with the total, our rates and ratios remain useful, because the numerators and denominators experience errors in the same direction". Some statisticians even make a virtue out of their inability to get the total right. See, for example [24, p. 31].

How Did the CES Miss 8 Million People?

In what plausible ways could the under-enumeration of 8.1 million people arise? Six clusters out of 291 were not enumerated, which immediately explains 2 percentage points out of the 12 per cent under-enumeration. The other 10 percentage points must, less certainly, be due to incomplete sampling frame, slippage between the sampling frame and field work, errors in the calculation of sampling fractions (predominant in one direction) and simple omissions of households and persons in addition to the census omissions discovered during the CES enumeration.

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[*]The approach as such is somewhat unusual in the annals of demographic analysis. Ordinarily, projections cannot be "wrong" unless miscalculated arithmetically. When the status of forecasts is claimed for them, it is found that they disagree with subsequent populations by wide margins. If they agree somewhat more narrowly, then for wrong reasons, but the comparison is always made from the enumerated population to the projection. This is the first instance, known to the present writer, that the comparison is made from the projection to the census population. Another writer uses another projection to hint that there was over-enumeration [4, p. 179].

Table 2

Population of Pakistan according to the 1972 *Census Enumeration and Evaluation*[1]

(1)	(2)	(3)	(4)	(5)	(6)
a.		All areas	Rural	Metro[2]	Urban
b.	CES: ECP (CES universe)		34,148	14,778	4,372
c.	RF		1.2	0.8	1.2
d.	b × c	58,046	40,978	11,822	5,246
e.	CATA		2,507		
f.	Population in institutions[3]		100	300	100
g.	d + e + f	61,053	43,585	12,122	5,346
h.	Net under-enumeration as % of b		5.57%	8.72%	7.91%
i.	$\dfrac{e+f}{(100-h)}$. h	189	154	27	9
j.	g + i: CES population whole Pakistan	61,241	43,738	12,149	5,355
l.	Census totals	64,980	48,422	11,415	5,143
m.	$\dfrac{1}{(100-h)}$. h	4,388	2,856	1,090	442
n.	l + m	69,368	51,278	12,505	5,585
o.	n − j: "lost" by CES	8,126	7,540	356	230
p.	o as % of n	11.7%	14.7%	28.8%	4.1%

Abbreviations used

CES : Census Evaluation Survey
ECP : Estimated Correct Population
RF : Raising Factor
CATA: Centrally Administered Tribal Areas

[1] All figures are in thousands, except for percentages and line b which is in single persons; calculations were carried out on untruncated figures.
[2] The 16 largest towns shown in CES: 6 and 7.
[3] Arbitrary assumptions. During the 1960 housing census 0.1 per cent in rural areas and 1.3 percent in urban, of the population enumerated lived in institutions (Pak. Census Comm.) 1961(10): 81 and 99). Should the same proportions have prevailed in 1972, the institutional population would be (41+154+68=) 263,000 instead of the arbitrary (100+300 +100=) 500,000.

Sources: b(4)−(6): CES, p. 17 [12]
c(4)−(6): paras 2.6, 2.13 and 2.16 d CES

e(4)   : Pak. Census Org., 1973, p. 1 [16]
f(4)—(6): CES: 17
1(3), (4) : Pak. Census Org., 1974/75 [17]
1(5)   : CES, p. 7

1(6)   : Pak. Census Org., 1974/75 and subtracting 1(5)

Derivation of rural/urban populations

	Rural	Urban
Punjab	28,486	9,257
Sind	8,307	5,700
NWFP	7,148	1,189
Baluchistan	2,007	398
CATA	2,473	13
Pakistan	64,980	48,422	16,588

Source: [17]

Furthermore, account has to be taken of the possibility that duplicate households, not discoverable under the CES procedure [12, section 3.1 and foot note 4] would have reduced the CES-determined under-enumeration, the latter being a net concept. In such a case, lines *h*, *i* and *j* of Table 2 would decline very slighty and lines *m* and *n* more markedly and, on balance, there would be a net decline in lines *o* and *p*. In other words, CES would be shown to have "lost" less than 8 million people.

The Two Reported Age Distributions and the One Adjusted

The CES reported one age-and-sex distribution (18 age-sex groups) for each of the three CES universes (rural, metro and urban). For each of these (18 × 3 =) 54 age-sex groups, the net under-enumeration in percentages is reported. When a figure was drawn for the purposes of the current analysis, showing the two proportionate age distributions, the differences between the two pyramids were not dramatic enough to warrant reproduction in this article. All the adjustments were in the "right" direction; that is to say, they make the new age pyramid smoother and more consistent with common sense and with the 1961 age pyramid, but only the additions at age zero made a significant change by filling up noticeably, but only partly, an obvious defect of the unadjusted CES age pyramid.

Figure 1 compares the adjusted CES age pyramid with the 1961 unadjusted proportionate age distribution and we can see that even the adjusted CES age pyramid repeats the outstanding features of 1961; shortage of children aged 0, shortage of children aged 1-4 (or surplus at ages 5-9) and masculinity ratio first declining then increasing, at least between ages 10 and 40. On the other hand, the worst "holes" at ages 10-14, for both sexes, and at 5-9 for girls that were such a noticeable feature of the 1961 distribution seem to have been papered over or they dissolved themselves with the passage of time in neighbouring age groups.[6]

At the time of writing this article, census age distribution for 23 districts (out of 61) were available. There is no space in this paper to analyse these, or to do complete demographic justice to the CES age distributions.

Anticipating the results of another analysis, not given in this article, let the main impression be reported of a crude comparison between the combined age distributions of the 23 districts and the adjusted CES age pyramid. The "census" age distribution of the 23 districts comes reasonably close to the adjusted CES age pyramid, but both fall short by a long mark of what the real age distribution is likely to be. This matter is taken up in the next section. For the purposes of this section, let us conclude that the heroics of the CES were largely in vain. And small wonder; the exercise was similar to the census, and therefore similar errors were committed. The probing questions in the CES schedule did not apparently introduce enough difference.

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[6]Subject to separate demographic analysis, the 1961 shortages at ages 10-14 for both sexes are likely to be shown to be real shortages due to low fertility and high infant and child mortality in the years around the partition 1947-1951. These shortages are emerging in 1972 at ages 20-24.
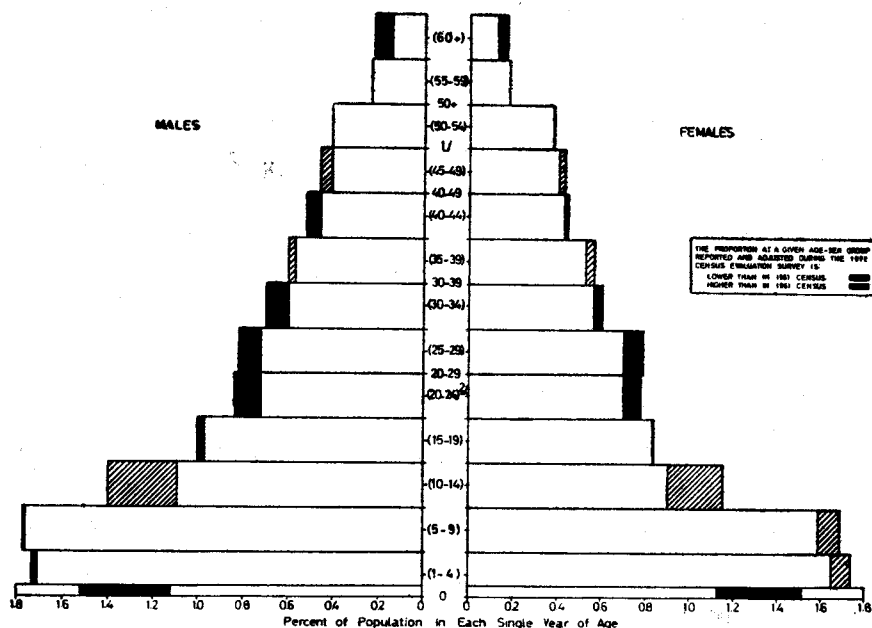
Figure 1

The Proportionate Age Pyramids of the Population of Pakistan According to the Unadjusted 1961 Distribution and the Adjusted 1972 Census Evaluation Survey

[1]The 1972 age group 50 has been divided into quinquennial age groups arbitrarily, but so as to smooth the age pyramid.

[2]The quinquennial age groups refer to 1961, the decennial to 1972. This unorthodox comparison tends to increase the amount of shading for the age groups 30-39 and 40-49.

The CES, the 1961 Underenumeration and Subnational Variations

In the 1972 underenumeration-overenumeration controversy, the CES comes down firmly on the side of 1972 underenumeration. Consequently, the CES must be a partisan of high fertility, low mortality, and improvements of enumeration completeness in 1972 relative to 1961.

Thus, at one stroke, estimates of low completeness in 1961 [e.g. 6, 11 and 21] gain credence in comparison with estimates of high completeness [5, 25]. The suggestion of 100 percent completeness in 1961 is untenable in the light of CES results [15] or, for that matter, in the light of any informed demographic opinion.

There is, however, a considerable qualification. The CES estimate of net underenumeration is not only a net value, probably insufficiently netted by the inability of the CES to estimate duplicate and imaginary households. It is also an average value of considerable variations between districts and provinces. Some of these are reflections of true differentials in natural growth and changes by migration, while some might reflect areas included in the census of 1972, but not fully within the administrative grasp during the 1961 census.[7] However, to the extent that some of the differentials are due to over-enumeration, the power of the conclusion of this section is weakened. It is unlikely, indeed impossible, that the overenumeration could have been of such an order as to destroy the conclusions of this section altogether. However, only subsequent demographic analysis may restore our confidence in it.

The Problem of Age Group 5-9

With the same stroke, weakened or unweakened, favouring high fertility, support is given to the age group 5-9, protruding in both 1961 and 1972. These continuing "sore thumbs" on both sides of the age pyramid demand as a corollary that ages 0-4 be filled up to make a smooth pyramid, more than the CES did with its adjustment factors.

Alternatively, if we think that ages 5-9 have been swollen at the expense of age 0-4, the age pyramid becomes slimmer and suggestive of lower fertility. As can be seen in Table 1, most analysts shave off chunks of varying size from ages 5-9. (This writer did it for East Pakistan, but not for West Pakistan.)

Recent Reported Fertility Decline Not Confirmed

One minor question that has not been answered by the CES concerns the possibility of a very recent fertility decline under the impact of the national family planning programme. There are no data for very recent years, but in 1966-67, it has been reported for all maternal age groups that, in comparison with 1964-65 and previous years, there has been a marked decline in marital age-specific fertility rates on the average from 281 to 232 [22]. There could have been no increase in the already high proportions marrying [10]. On the

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[7]As an example, a village may consist of more than one part, all under the same name, even if some of the parts have additional sub-names. It has been repeatedly, but only conversationally, reported that some of these were included in 1972 for the first time. Classical demographic analysis is pretty hopeless with regard to such encroachments on "new" areas.

contrary, some observers of the Pakistani scene have the impression that there was a decline in proportions marrying and an associated increase in the age at marriage [3]. The children, not born in 1966-67 and since, would be aged 0 through 6 in 1972. In the single-year age distribution for the 23 districts menioned earlier above there is no indication of a break below age 7. The shortages at ages 0 and 1-4 on Figure 1 are better viewed as freaks of enumeration (and possibly age reporting), same in 1972 as in 1961, than as a reflection of fertility decline induced by the family planning campaign. In this light, the National Impact Survey must have been an exercise in futility. The 1972 Census and the CES show no trace of its alleged findings, different from what we had all along in 1961 and 1972.

Dependence of Parameter Estimation on Completeness Estimations

Two questions have arisen in the previous section. Is it reasonable to resolve all the many questions and doubts in Pakistani demography with one report of 47 pages? Secondly, is not the CES over-reaching itself and are we not over-reaching ourselves by taking it seriously and drawing further con-sequential conclusions from it?

With regard to the first question let a confession of bias be made. This writer does not mind a census net underenumeration of 6.2 per cent. In fact, judging from experiences in Pakistan and elsewhere, the estimate is on the low side. It is implausible that the 1972 underenumeration was only 6.2 percent. On the other hand, this writer does not like a CES discovering an underenumeration of 6.2 per cent. The medium is just not powerful enough (e.g. see [8]). What could have happened then? Probably, the matching criteria applied were so rigorous that too many CES persons were unidentified on the census list. At the time of the CES matching, the theory of PGE matching [14, e.g. pp. 106-113] had not yet been articulated in its dimensions relevant to this work and there is no trace that PGE experiences [18, pp. 44-51; 7, pp. 37-114] were actually being used for purposes of CES matching.[*]

Another source of overestimation might have been the area between the *de facto/de jure* definitions and the time lapse between the census enumeration in the second fortnight of September 1972 and the CES field work that was not completed until September 1973, though the bulk of the CES enumeration was over by January 1973. On the other hand, field reconciliation was carried out through a special Census/CES follow-up schedule, which had the great PGE virtue, already stressed, of not disclosing the source (whether census or CES) of the non-matched person. It is difficult to knock such a survey.

On the question of over-reaching or expecting the CES estimate to do too much, the situation is even more difficult because of its being less plausible. If we take the CES estimates of underenumeration seriously, then the 1972 Census total of 65.0 million becomes 69.4 million. This, as shown in Table 2 is 8.1 million more than the CES-based estimate of 61.2 and in itself does not

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[*]The statistical authorities should be encouraged to report in detail on the matching procedure adopted and the matching rules selected, particularly in view of the forthcoming overlapping surveys with the intended large-scale matching. There references were quoted in the text and let it be said that these features are being reported routinely. For an example from Morocco, see [9].

stretch credulity.[9]   But the new total of 69.4 million is based on the insufficiently corrected CES age pyramid which itself has typical for Pakistan (and not only for Pakistan) holes at certain ages.   Anticipating the results of a forthcoming demographic analysis to fill in these holes, we must compensate for the still missing children, some 2.8 million as a minimum estimate, to arrive at a total of (69.9 +2.8 =) 72.7 million in 1972.   This latter total implies an increase since 1961 (i.e. for a period of 11 years and 8 months) of 29.3 million or 68 per cent. However, this is an unfair and even illogical comparison.   The adjusted 72.7 million have to be compared with an adjusted 1961 total.   Table 1 assembled various adjustments made by demographers.   Choosing the earliest adjustment, which resulted in 46.9 million [11], we have an increase of 25.0 million people or of 53 per cent.   The 53 per cent over a period of 11 years and 8 months gives an annual compound rate of increase of 3.6.   Such a rate requires for consistency a CBR of 52 and a CDR of 16, both rates perfectly plausible if that is what comes out of our calculations.   If the over-enumeration is shown to have been serious, the three rates will be lowered somewhat.   On the ground of plausibility the birth rate and growth rate, rather than the death rate, will be lowered but preliminary results suggest that the lowering would be quite small on account of the alleged overenumeration.   An extreme limit is suggested in the next section.

Two Limit Scenarios for Pakistan's Parameters and Consequent Vital Rates

Two extreme scenarios are possible (and, of course, any number of permutations and combinations in between).   Under one scenario consistent with 52 − 16 = 36, suggested in the previous section, we assume or accept the following:

  (*i*) high age-and-sex-specific underenumeration estimated by most demographers for 1961;
  (*ii*) age-and-sex-specific underenumeration as evaluated for 1972 by the CES;
  (*iii*) no general underenumeration of a non-specific kind (or same proportions in both censuses); and
  (*iv*) perfect work by the CES.

Under the other scenario, we slim all adjustments to a minimum, consistent with common sense and other parts of data available to analysis:

  (*a*) the age-and-sex-specific underenumeration in 1961 was the lowest among the estimates assembled in Table 1 (excluding the untenable zero estimates); in itself, quite a heroic assumption;

  (*b*) the age-and-sex-specific underenumeration reported by the CES in 1972 was substantially due to over-rigorous matching and feeble field follow-up; under this assumption the 54 CES adjustments would be trimmed to, say, 20 age-and-sex groups; these are heavily grouped in the youngest ages, consistent with the habitual features of reported age distributions of Pakistan, but not big enough to bring the reported age distribution nearer to reality;   thus, we have another heroic assumption;

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[9]However, we pointed out two sources of "overestimation" respectively in footnote 7 and in the last section of the text.   Only further analysis could quantify them and possibly lower somewhat the totals cited in the text.

(c) the presumed overenumeration can be traced to certain selected areas, that have been quantified [12, Table 5]. While the figures in the reference given are pure guesses, they cannot in reality be very much greater and are just not big enough to do the job expected of them [4, p. 178]; and

(d) total emigration, both legal and clandestine, was three times as great as the emigration of the Pakistanis to the U.S.A., Canada and the U.K. during the years 1961-72 (33,000) or 100,000, not enough to counterbalance the gains through returning West Pakistanis from East Pakistan. Whatever be the case, it is quite unimportant relatively to the explanations which are needed [4, p. 179].

Under the second scenario, the equation $52 - 16 = 36$ becomes $48 - 15 = 33$, subject to further analysis. Depending on one's temperament, one may be impressed with the narrowness of the choice between the alternatives or despair that demographic theory and survey practices will never lead to a determination of the true demographic situation in Pakistan.

If this writer were put against a wall and told to express his impression immediately he would choose for the year 1972 the following:

67 million for the population total (line n in Table 1 minus 1,300,000 as a maximum estimate for certain areas with presumed overenumeration)

50 per 1000 population for crude birth rate (half way between the two extreme estimates of this section and close to the 1961 estimate)

16 per 1000 population for crude death rate

3.4 per cent for annual natural growth (consistent arithmetically with the two estimates for vital rates and consistent with the suggestion from population total of 1972, from the instances of presumed overenumeration, in certain areas and with the minor consideration of emigration).

Fortunately, soon further demographic analysis will be possible and the need to rely on such desperate measures as undertaken in this section will, hopefully, disappear. However, it is unlikely that the next estimates would be very different from the guestimates of this article, because they could not be very different. One of our big unknowns was the possbility of the over-enumeration, even though as shown elsewhere it could not have been big enough to do the whole job [12]. We consider further the realism of this situation in the next and concludings ection.

How Could the Presumed Overenumeration happen in Certain Areas?

Even though, like emigration, it could not affect the national estimation much[10] the issue deserves more professional attention than it received. Such overenumeration may take place in a variety of ways and it may be useful to list these ways so that they can be considered one by one. *A priori* deliberate overenumeration can take place through:

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[10]See items c and d in section II and Table 5 in this author's earlier paper [12].

(*i*) over-reporting by respondents;
(*ii*) individuals added wilfully to household by enumerator;
(*iii*) artificial households created by the enumerator;
(*iv*) multiplying enumerated households in the local office; and
(*v*) artificial households created in the local office.

If there was determined over-reporting by individual heads of households, CES had a chance to discover what happened only if the respondent was inconsistent in his over-reporting between the census and the CES. Ironically, he might have recovered by the time of the field follow-up, his lies became more consistent and the early CES discovery would be classified as a "CES error" by the reconcilers. CES was designed to catch (ii), and a distribution by household size is an early tabulation priority. Also, an official inspection by a perceptive observer of census schedules to watch for the allegedly frequent households with 20 members is called for. CES would also unearth (iii) provided they did not give up too soon. Surely, the CES matching clerks would have noticed if, in the blocks they were matching, there were large numbers of census questionnaires without corresponding CES forms. CES would be less successful with (iv), unless both, the real household and the duplicated household fell into the CES sample, and, even then, matching clerks taking their "one way" instructions very strictly would not look for that kind of trouble. If (v) were' kept out of the CES sampling frame, CES had no chance of running into them. In conclusion, CES was designed when the possibility of this particular problem was not clear. Field practitioners, including the present writer, are more sensitive to the task and responsibility of guarding against the more frequent occurrence of underenumeration, than against the rarer example of overenumeration. CES was, therefore, not particularly equipped to deal with the alleged overenumeration. Nevertheless, it had a fair chance of coming to grips with most (cases ii through v) potential sources of area selective (in the demographic meaning similar to age-selective or sex-selective) overenumeration, though not if there was sustained and consistent over-reporting by respondents envisaged in the above typology as case (i).

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