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THE 2017 CENSUS OF PAKISTAN:
Analyses of Results - Volume 1

2017
207.77

1998
132.35

1981
84.25

1972
65.31

1961
42.88

1951
33.78

Population in Million

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THE 2017
CENSUS OF PAKISTAN:
Analyses of Results – Volume 1

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CONTENTS

ACRONYMS

AJ&K	Azad Jammu & Kashmir
CCI	Council of Common Interests
CNIC	Computerized National Identity Card
FATA	Federally Administered Tribal Areas
GB	Gilgit Baltistan
HED	Household Economic & Demographic Survey
KPK	Khyber Pakhtunkhwa
NADRA	National Database and Registration Authority
NFC	National Finance Commission
NIPS	National Institute of Population Studies
PBS	Pakistan Bureau of Statistics
PDHS	Pakistan Demographic and Health Survey
PDS	Pakistan Demographic Survey
PES	Post-census Enumeration Survey
REN	Retrieval of Enumerator form
TFR	Total Fertility Rate
UN	United Nations
UNFPA	United Nations Population Fund
USA	United States of America

1.   INTRODUCTION

Besides providing relevant data at national, provincial and local levels for proper planning, a population census is also one of the prerequisites of a country's democratic setup, as it provides the number of inhabitants in each area in the country, thereby enabling people to get proper representation in elected bodies on the basis of most recent census results. Accordingly, most countries of the world conduct a census, typically every 10 years, and some even conduct it every 5 years.   During 2000-16, a census was conducted in almost all the UN member states, with the exception of only a handful of countries, including Pakistan.

The United Nations (1998) defines census as, "the total process of collecting, compiling, evaluating, analysing and publishing or otherwise disseminating demographic, economic and social data pertaining at a specified time, to all persons in a country." In practice, this does not mean that every person actually is seen and interviewed, but only one adult in a household provides information about all other residents (relatives and non-relatives), to questions asked by the census enumerator.

Census data collection is done using de facto or de jure method (United Nations. 1991). The de facto population method takes into account all persons who are physically present in the household at a specified time, whether or not they are usual residents. This concept has a very clear definition, which is easy to understand for both the enumerator and the respondent. The de jure population method, on the other hand, collects information about all usual or permanent residents, whether or not they are present in the household at the time of the enumeration.

2.   BRIEF HISTORY OF CONDUCTING CENSUS IN PAKISTAN

As part of the regular decennial census initiated by the British administration in the sub-continent in 1881, Pakistan's first post-independence population and housing census was conducted in 1951, which followed the same methodology adopted in earlier censuses (Jillani, 2003). Following the second census conducted in 1961, a post-census enumeration survey (PES) was conducted, which indicated about 6.5 percent under-enumeration in the country. Subsequently, the results were adjusted to account for under-enumeration across the board. The third census was postponed due to the civil war in East-Pakistan, however was conducted in 1972 in two phases. The full enumeration was done using a short form covering basic demographic characteristics. This was followed up a year later, with a Household Economic & Demographic Survey (HED) in two percent of households, collecting detailed socio-economic and demographic information, including housing characteristics. During HED's enumeration phase, parts of the country experienced severe floods, which resulted in a substantial proportion of

households forced to move to higher grounds and safe places, and thus many could not be enumerated. Perhaps the fourth census conducted in 1981 was closer to being accurate. However, while a post-enumeration survey was conducted following the census, but its results were not made public. The fifth census was due in 1991, but was postponed due to over-reporting of inhabitants in the listing of households, particularly in Sindh. However, it was conducted after an interval of 17 years in 1998 with the assistance of armed forces, whereby each enumerator was accompanied with a soldier. The purpose was to check any exaggerated figures. In such a situation, perhaps no over-reporting was done, but due to non-responses, difficulties in reaching all the households and non-reporting of some persons, any impact on under-reporting as well as on the quality of reported population statistics was not considered by Pakistan Census Organization, therefore, results could not be validated.

Only limited secondary analyses of first through fourth census have been undertaken, with the exception of four scholarly work by Jillani (1964), Sadiq (1965), Shah (1986) and Khan and Karim (1986), on migration, female labour force participation and nuptiality trends and differentials in Pakistan and the preliminary results of 1998 census data was utilized for a paper by Nasar et al (n.d.). In 2000 a steering committee of experts was constituted by the Government of Pakistan with support from the United Nations Population Fund (UNFPA) to review the 1998 census results. This resulted in a comprehensive edited volume (Kamal et al, 2003), which covered almost all aspects of the 1998 census. It was found that the 1998 census suffered from various inconsistencies, such as possible undercount of the population as well as quality of data. In 2011, a housing census was conducted to determine the number of residents in each household. However, due to suspected over-reporting of the population in Sindh and under-reporting in Punjab, the population census was abandoned.

3.   THE 2017 CENSUS: METHODOLOGY AND DEFICIENCIES

In July 2016, the Supreme Court of Pakistan took a *Suo Moto* notice regarding delay in carrying out a census in the country and directed the Government to conduct the census as soon as possible. Accordingly, after a delay of 19 years, the sixth census was conducted during March-May, 2017, in two phases. The country was divided into about 164,000 census blocks, each containing between 200-250 households. In rural areas, a *Patwar's* circle and in urban areas parts of town/cantonment containing 5-7 census blocks, constituted a Circle, each having an average of 1,500 households. A Charge consisted of 5-7 circles (a *Qanungo's Halqa* in rural areas or parts of a Town/Cantonment in urban areas). Each Sub-Division/Cantonment/*Tehsil/Taluka* was declared as a Census District. Number of, blocks, circles, charges, census districts and administrative districts for each province and other two federal areas are shown in Table 1. For the supervision of enumeration

operations, coordination committees were formed at the Provincial and Administrative District levels. Besides, vigilance teams were formed in each Census District to monitor the field work to ensure complete coverage of the population. For enumeration purposes, two blocks were assigned to each enumerator who along with one armed forces personnel, made house to house visit. Enumeration was completed in about half of the census blocks in each province during March15 and April 15 and in the other half, during April 25 and May 27. This was the longest period to complete the census exercise in Pakistan, as in the first two censuses, enumeration was completed in three weeks, while in the third, fourth and fifth census, enumeration was completed in two weeks (Chaudhry, 2003).

Table 1
Number of Blocks and Census Areas, 2017 Census: Provinces/Regions and Pakistan

Province/ Region	Administrative Districts	Census Districts	Census Charges	Census Circles	Census Blocks
Punjab	36	166	1,562	11,411	87,006
Sindh	29	146	933	5,144	39,139
Khyber Pakhtunkhwa (KPK)	25	82	342	2,316	21,577
Balochistan	32	36	285	784	10,212
FATA	7	7	48	288	4,227
Islamabad	1	1	14	107	1,514
Pakistan*	**130**	**438**	**3,183**	**20,053**	**163,675**

*excluding Gilgit-Baltistan and Azad Jammu & Kashmir.
Source: Pakistan Bureau of Statistics

For the household listing from each living quarter, information was collected about its address, house number, type of structure, name of the household head and Computerized National Identity Card (CNIC) number of the household head or any other adult household member. Household listing was followed by the housing and population census. In the housing census, information was collected about each housing unit regarding its tenure status; gender of the owner; number of rooms; period of construction; construction material used in outer walls and roofs; source and location of drinking water; source of lighting; type of fuel used for cooking; availability of separate kitchen and bathroom, type of latrine facility; availability of television; radio, newspaper, mobile phone and computer; and the number of any household members living abroad for more than six months. The population census collected information about each person residing in the household for more than six months. Details were collected regarding his/her name; relationship to the head; gender; age in completed years; religion; mother tongue; nationality; marital status (of those 10 years or older); literacy status; school attendance and level of education completed and whether they have been involved in economic activities during the past 12 months including the kind of activity (for those five years or older). For those 18 years or older, information was collected whether they have obtained CNIC.

In each phase of field operations, the household listing was completed during the first three days, followed by completing the census form in the next ten days, while one day was set aside for collecting information about homeless population in the area. For smooth field operations, a map of each census block showing well known land marks were to be provided to enumerators and supervisors.

After completing enumeration in each census block, the enumerator completed a summary Retrieval Enumerator (REN) form. The summary forms listed the number of households in each block along with population size and gender of household members. After the census operation was completed, about 164,000 REN forms were hand tabulated by the staff of PBS and subsequently, provisional results were compiled, which were announced on August 24, 2017.

Census results are never perfect, and thus under or over counting of people does happen, which is prevalent in both developed and developing countries. Therefore, to check the validity of a census result, the United Nations (2010) recommends a post-census enumeration survey (PES) immediately following the census, which is conducted in randomly selected enumeration blocks and its results are cross-checked with the census results obtained in the same enumeration blocks. PES is routinely conducted in many countries, with varying results. For example, PES conducted in USA following the 1990 census had a net undercount of 1.61 percent while the 2000 Census had an estimated net overcount of 0.49 percent (US Census Bureau, 2012).   Results of PES conducted following the two recent censuses in Australia found that the net undercount rate in 2006 was 2.7 percent, which was reduced to 1.7 percent in 2011 (Australian Bureau of Census, 2016). PES conducted in the Sub-continent following the 2011 censuses indicate that in the Indian census of 2011, 2.3 percent people were missed with wide regional variations and higher undercount detected in urban areas (Registrar General & Census Commissioner, 2014). In the 2011 census of Bangladesh, 4 percent people were missed (Bangladesh Institute of Development Studies, 2012).

Besides, in countries where the majority of people are not educated, the way questions are framed and asked in the census could also result in content errors. In the 2017 census of Pakistan, the CNIC number of the head or any member of the household was to be recorded for verification purposes only. However, according to the UNFPA Observer Mission Report (UNFPA, 2017) the CNIC of each household member was checked and verified by the armed forces personnel who accompanied the census enumerator, who sent a message to the issuing authority (NADRA) about the validity of the card. The UNFPA Observer Mission Report although commends the dedication and efficiency of enumerators working in the field and cooperation of respondents, however, also mentions that mostly information

available on the CNIC was relied upon by the enumerators. It may be noted, that once a person migrates internally, changing the address on CNIC is not mandatory, therefore, it is likely that due to reliance on information available on CNIC, perhaps those household members having a different address on CNIC were not included due to de jure methodology used, assuming that they will be counted at their permanent place of residence. Besides, the requirement for all adult household members to provide CNIC number might have forced those without a CNIC –particularly illegal aliens- to opt out from the census enumeration. Given that a PES was not conducted following the census, there is no way to validate the 2017 census results. The UNFPA Observer Mission Report also provides instances where area maps were not available and households were not marked. Thus, the possibility of the 2017 census being affected due to the above mentioned reasons cannot be over-ruled.

Earlier this year, the Secretary of Statistics Division, being Principal Accounting Officer, constituted a committee to evaluate all aspects of the census 2017 and to highlight weaknesses for possible remedies for the release of the detailed results and for compiling good practices/lessons learnt for forthcoming censuses. The Technical Evaluation/Audit Committee consisted of Deputy Director General and Director, PBS, Islamabad and Provincial Census Commissioner, Lahore which was supported by an Expert Group. The committee compiled a comprehensive "Report on Technical Evaluation of 6th Population & Housing Census-2017", which points out at several administrative and technical loopholes in conducting the census (Statistics Division, 2018). For example, the Report notes that the Governing Council of PBS had constituted a Sub-committee to advise PBS on census operations. In its meetings, the Sub-committee showed concern that "the Census is not being planned the way it was envisaged" and "none of its recommendations were being followed in true letter and spirit nor any of the other recommendations made by the national and international agencies to PBS were accepted… the concerned authorities of PBS had adopted whatever, they liked and rejected that was not according to their sweet will". Furthermore, "Geography/GIS officers had not been involved in the process of updating work of both Urban and Rural Area Frame and Maps due to which number of issues & problems arose in the field, while due to lack of coordination with the national bodies and non-compliance/partial compliance of recommendations by national & international agencies, coupled with acute shortage of expert staff and lack of technical expertise, had left the PBS with number of loopholes". A Pilot Census was strongly recommended by UNFPA and the Sub-committee which was not undertaken in spite of repeated recommendations by National and International Experts. The Sub-committee was also of the opinion, that owing to the lack of comprehensive and accurate data from other sources such as civil registration and population registers, there was need to conduct a Post Enumeration Survey (PES), as is the practice in many countries. This was also

turned down by PBS authorities. The Report also points out that the census ignored basic census standards such as breaches of confidentiality (by obtaining CNIC which was verified through SMS to NADRA) and breach of universality (by not enumerating refugee villages/camps). Extracts from the Report are, provided in Annexure 1, which makes the following recommendations:

- The final result of 6th Population and Housing Census, 2017, need to be compiled very cautiously and need to be verified. In this connection, committee of eminent demographers of the country may be formulated to carry out the demographic analysis of the Population Census data of 2017, to ensure its accuracy and authenticity. Three member Census Commission, which has been notified can steer this committee.
- Performance Evaluation Measures need to be devised for evaluating the contribution of different committees formulated for successful operation of Census, 2017.
- Financial Audit regarding the expenditures of Population and Housing Census, 2017, is strongly recommended and is urgently needed.
- In spite of repeated recommendations by National and International Experts a Pilot Census was not conducted for Population and Housing Census 2017. In future, this must be done at the planning stage.
- Since there is no error free census, there is need to consider Post Enumeration Survey (PES) as part of Census programme at the planning stage. In many developing countries, PES seems to be the most feasible method of evaluating census results owing to the lack of comprehensive and accurate data from other sources such as civil registration and population registers.

4.   POPULATION GROWTH IN PAKISTAN AND PROVINCES: 1951-2017

As a country's economy develops, first its mortality declines while the fertility remains high (Coale, 1984). This is the period when population grows rapidly. Eventually, fertility also declines, when the country achieves low population growth rate. Since the first census conducted in 1951 and the sixth in 2017, Pakistan's population grew over six-fold, from 33.7 million to 207.8 million. As shown in Table 2, annual population growth rate was higher during the 1960s and 70s, when mortality was declining rapidly, whereas fertility remained high, thus annual population growth exceeded 3 percent. However, due to fertility decline in the subsequent decades, annual population growth rate declined to 2.7 percent during the 1981-1998 inter-censal periods. Apparently due to very slow decline in fertility in Pakistan since 2000 (discussed in section 4.1), the annual inter-censal growth rate experienced a modest decline to 2.4 percent during 1998-2017, interestingly to about the same level as during 1951-1961.

Thus, a rapid population growth has resulted in Pakistan being far behind its South Asian neighbours, all of whom have achieved substantially low annual population growth rates. Although in the 1960s, most of Pakistan's neighbouring countries had about the same or higher fertility rate (average number of children born to a woman over her reproductive life span), but since then, all have experienced over two-thirds decline in their fertility.

Table 2
Population and Inter-censal Annual Growth Rates, Pakistan: 1951-2017

Census Year	Population (million)	Inter-censal Annual Growth Rate (percent)
1951	33.78	-
1961	42.88	2.5
1972	65.31	3.7
1981	84.25	3.1
1998	132.35	2.7
2017	207.77	2.4

Source: Pakistan Bureau of Statistics

On the other hand, during the same period, Pakistan experienced less than half decline in its fertility. Due to higher fertility rate in Pakistan, decline in infant mortality rate has been very slow, resulting in Pakistan having the highest infant mortality rate in Asia. Infant mortality rate is considered one of the major indicators of social and economic development. Thus, due to high fertility and consequently a rapid population growth in Pakistan, among all its neighboring countries, improvements in life expectancy at birth in Pakistan has been the slowest (see Table 3). If Pakistan is unable to lower its fertility, in the next 35 years its population is likely to exceed over 400 million. Thus, from the sixth most populous country in the world today, Pakistan may well be the third most populous country by the middle of this century.

Table 3
Demographic Indictors, South Asian Countries: 1960-2016

	Bangladesh	India	Iran	Nepal	Pakistan
Annual Population Growth Rate (percent)					
1960	2.9	1.8	2.6	1.7	2.4
2016	1.4	1.1	1.3	1.3	2.1
Total Fertility Rate (per woman)					
1960	6.7	5.9	6.9	6.0	6.6
2016	2.1	2.3	1.7	2.1	3.5
Infant Mortality Rate (per 1000 live births)					
1960	174.9	163.8	160.0	216.8	190.7
2016	28.2	34.6	13.0	28.4	64.2
Life Expectancy at Birth (years)					
1960	45.8	41.2	44.9	35.2	45.3
2016	72.5	68.6	76.0	70.3	66.5

Source: World Bank (2017)

Population growth in the four provinces of Pakistan and federally administrative areas (FATA and capital city Islamabad) have been quite different. During 1951-1981, Balochistan reported the fastest increase in its population, followed by Sindh, but for different reasons (see Table 4). In the case of Balochistan, it was apparently due to better coverage in succeeding censuses since 1951 or even due to over reporting (Afzal, 2003). On the other hand, during 1951-1981, Sindh experienced substantially high population growth due to constant migration to the province, mainly from Punjab and KPK (Karim, 1986), which is further discussed in section 4.2.

Table 4
Population Size and Inter-censal Percentage Growth, Provinces/Regions and Pakistan: 1951-2017

Province/ Region	Population (million)						Inter-censal Increase (%)		
	1951	1961	1972	1981	1998	2017	1951-1981	1981-1998	1998-2017
Punjab	20.54	25.46	37.61	47.29	73.62	110.01	130.2	55.7	49.4
Sindh	6.05	8.37	14.16	19.03	30.44	47.87	214.6	60.0	57.3
KPK	4.56	5.73	8.39	11.06	17.74	30.52	142.7	60.4	72.0
Balochistan	1.17	1.35	2.43	4.33	6.57	12.34	271.2	51.6	88.0
FATA	1.33	1.85	2.49	2.20	3.17	5.00	65.1	44.4	57.5
Islamabad	0.10	0.12	0.24	0.34	0.81	2.01	254.2	136.8	149.3
Pakistan	**33.78**	**42.88**	**65.31**	**84.25**	**132.35**	**207.77**	**93.3**	**57.1**	**57.0**

Source: Pakistan Bureau of Statistics

While during 1981-1998, Balochistan had the lowest annual growth rate among the four provinces, during 1998-2017 the province again reports the highest growth rate (see Figure 1). Since Islamabad was established as Pakistan's capital in 1959, it experienced very high growth rate during each inter-censal period. On the other hand, apparently due to large scale migration from FATA during the 1960s, the region experienced a

Figure 1
Inter-censal Annual Population Growth Rates, Provinces/Regions: 1951-2017

Source: Pakistan Bureau of Statistics
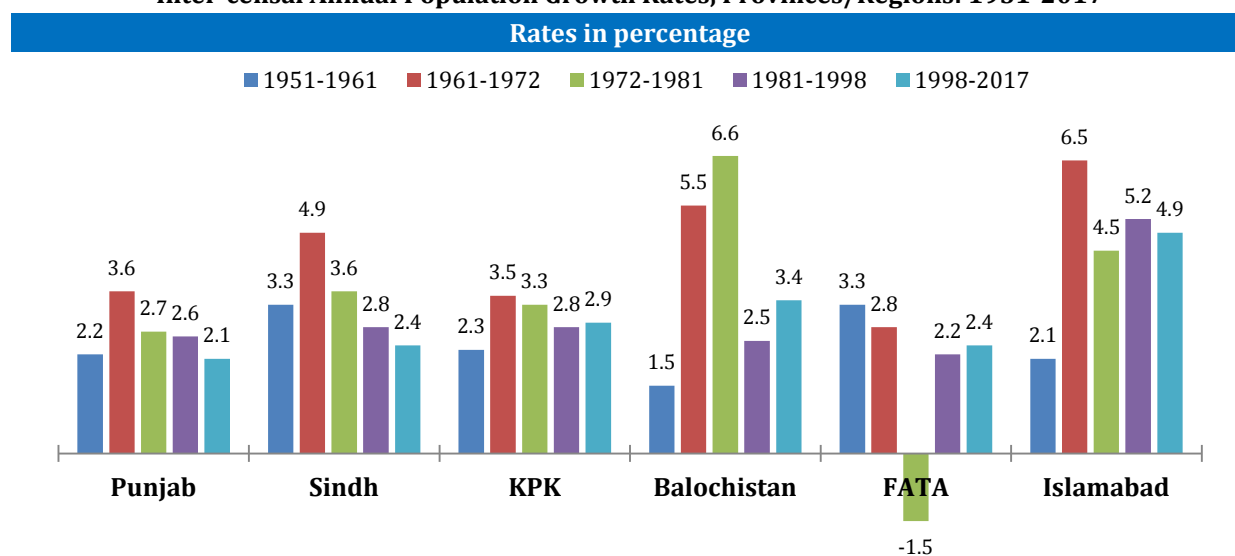
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negative growth rate during the decade. Although due to security reasons, during the past two decades, large scale migration has occurred from FATA, mainly to KPK and the city of Karachi, however, during 1998-2017, the inter-censal annual population growth rate in FATA is about the same as for the country. It is likely, that because of de jure method used in the 2017 census enumeration (discussed in section 3), most of the recent migrants and internally displaced persons who have moved from FATA and other provinces, particularly to Karachi, have been counted at their place of origin or permanent place of residence.

As a result of substantially higher population growth rate in Sindh during 1951-1981, its share in the national population increased from 17.9 percent in 1951 to 22.6 percent in 1981 (see Figure 2). Thus, in 30 years, Sindh experienced a 4.7 percentage points increase, (an average of 1.6 percentage point increase in each decade) in its share in the national population. Even though migration to Sindh had not subsided during 1981-1998 censuses (Karim and Naser, 2003), during the period, (in 17 years) Sindh's share in the country's population only increased by 0.4 percentage point to 23 percent. As compared to 1998, in 2017, the share of Sindh has remained the same, while that of KPK increased by 1.3 percentage points and of Balochistan by 0.9 percentage points. On the other hand, Punjab's share declined by 2.7 percentage points.

Figure 2
Percentage Share of Each Province/Region in Pakistan's Population in Censuses: 1951-2017

Rates per 1000 population
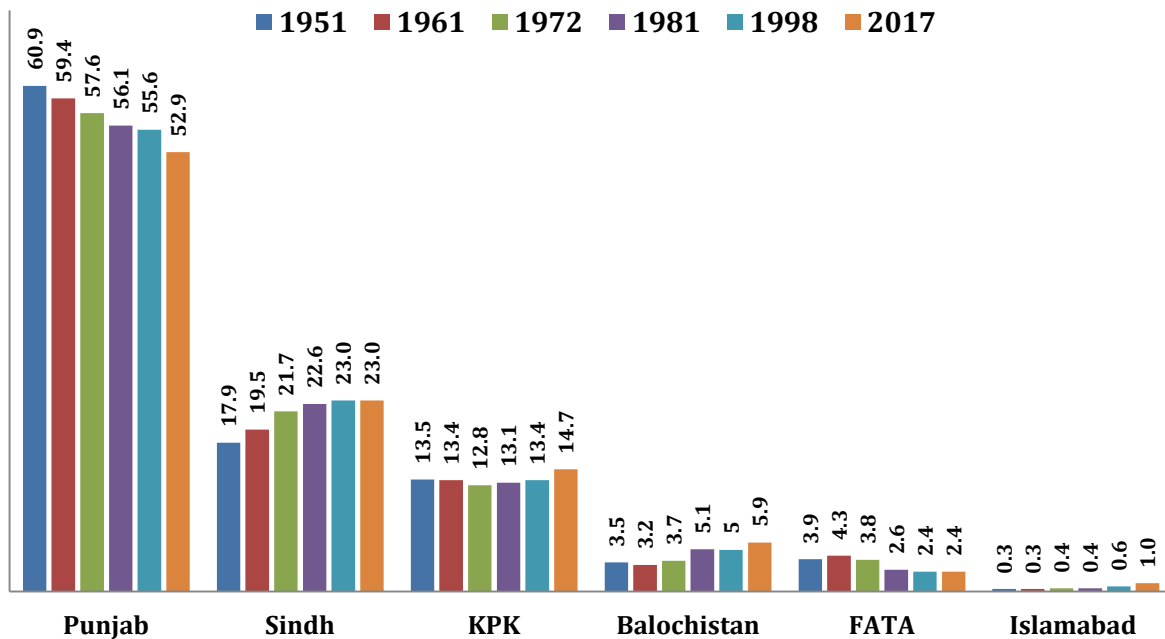
Source: Pakistan Bureau of Statistics

A combination of factors could be responsible for changes in the share of provinces in the country's population during 1998-2017 censuses. The possible factors could be:

- A sharper decline in fertility in Punjab and Sindh in comparison to KPK and Balochistan.

- Substantial decline in migration inflow to Sindh and increased inflows towards KPK and Balochistan.

- Under or overcounting of population due to the way the 2017 census was conducted.

Implications of each of the above mentioned factors are discussed below.

4.1 Fertility Levels and Trends

Pakistan is among one the few Muslim majority countries where total fertility rate (TFR) has remained high (Grim and Karim, 2011). Although Pakistan's previous censuses have collected information on births, but data have been of poor quality (Feeney and Alam, 2003). However, as illustrated in Figure 3, data collected through sample surveys by Pakistan Bureau of Statistics (PBS) and National Institute of Population Studies (NIPS) since 2000 indicate that fertility has remained at about the same level in Balochistan and has only modestly declined in Sindh and KPK, while recently in Punjab, on an average, each woman is bearing about half fewer child than in the other provinces.

Figure 3
Trends in total fertility rate (average number of children born per woman), by Province: 2000-2014
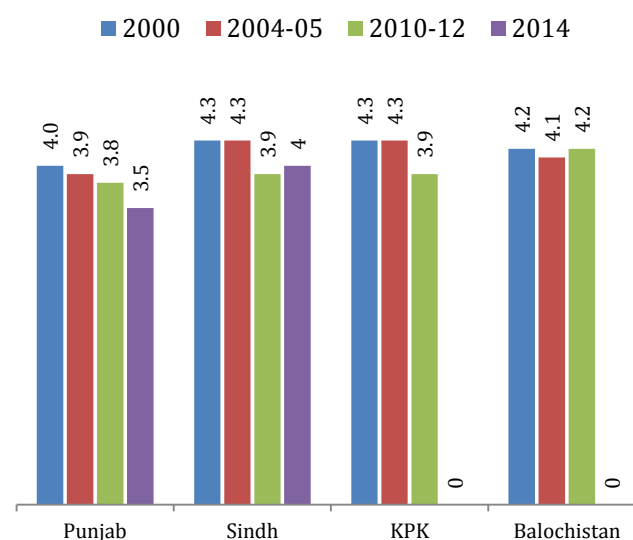
Sources: Pakistan Demographic Surveys, 2001; Pakistan Demographic and Health Survey, 2005-06, Pakistan Demographic and Health Survey, 2012-13; Punjab Multiple Indicator Cluster Survey, 2014 and Sindh Multiple Indicator Cluster Survey, 2014

4.2 Inter-Provincial Migration

Constant migration from rural to urban areas and from other provinces to Sindh – particularly to Karachi– has been quite prominent as was indicated by censuses conducted during 1951 to 1981 (Karim, 1986). This trend of migration continued in the 1990s as well. As shown in Table 5, during ten years prior to the 1998 census, of about 3.8 million people who migrated from one district to another, with the exception of Sindh, nearly half

migrated within their own province and the other half to other provinces. Thus, a majority of migrants in Punjab and KPK moved within the province. On the other hand, in Sindh the pattern of migration was quite different, where of all the internal migrants, 71 percent had originated from other provinces. Unlike the earlier censuses, in

Table 5
Patterns of in- and out-flow of migrants between and within provinces 10 years prior to the 1998 census

	Punjab	Sindh	KPK	Balochistan	Total
Migration within the Province					
Number (000)	1,321.2	319.2	182.6	56.1	**1,879.1**
Percent	58.2	29.2	55.9	42.1	-
Migration from outside the Province					
Number (000)	772.0	949.1	143.8	77.2	**1,942.1**
Percent	41.8	70.8	44.1	57.9	-
Percent of all Internal migrants who settled in each Province					
Percent	48.9	39.8	7.4	4.0	**100.0**

Source: Pakistan Bureau of Statistics

2017, Form 2-B -which collected information on migration on sample basis- was dropped. Therefore, estimates of inter-district and inter-provincial migration cannot be derived from the 2017 census. Thus, recent volume of and trend in internal migration cannot be determined.

In Pakistan, since males predominantly migrate in search of employment (Fritz and Karim, 1986), sex ratio (male per 100 females) is likely to be higher at the point of destination and lower at the point of origin of internal migrants. Higher sex ratios in Sindh in 1998 as well as in 2017 (see Figure 4), indicate higher presence of males in the province, which is most likely due to migration of males from KPK and Punjab where sex ratios are considerably lower. Whereas, higher sex ratios in Balochistan could be due to high mortality among females, particularly very high maternal mortality in the province, coupled with under-reporting of females.

Figure 4
Sex Ratios for Provinces and Pakistan (Males per 100 Females): 1998-2017
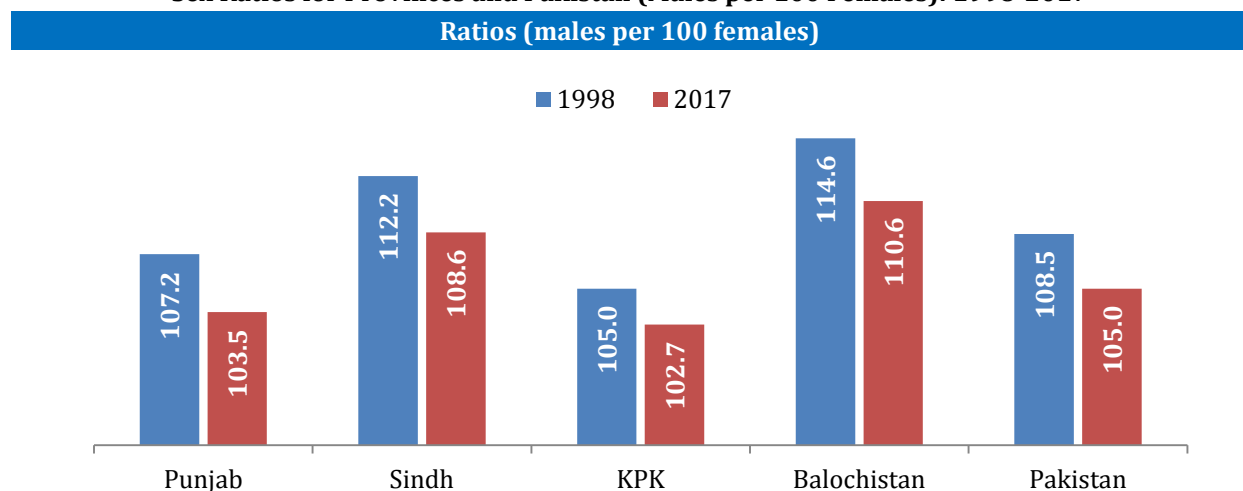
Source: Pakistan Bureau of Statistics

5. POSSIBLE UNDER OR OVERCOUNTING IN THE 2017 CENSUS

To determine demographic indicators of the country and provinces Federal Bureau of Statistics conducted yearly Pakistan Demographic Survey (PDS) during 1984-2007, however it was discontinued in 2008. Therefore direct estimates of demographic indicators (birth and death rates) during the past decade are not available, thus making it difficult to estimate the current population of the country and its provinces. To determine various economic indicators of the country and provinces, Pakistan Bureau of Statistics conducts yearly Household Integrated Economic Survey (HIES). Report of these surveys publishes average number of persons living in each household in each province. Table 6 compares average household size reported in 1981, 1998 and 2017 censuses with average household size, reported in PDS conducted during 1978-79 and 1995-97 and HIES conducted during 2011-16. Average number of persons living in each household in Sindh declined substantially from 6.8 in 1981 census to 5.6 in 2017. In Balochistan as well, the average household size declined slightly from 7.2 in 1981 to 7 in 2017. On the other hand, in Punjab the average household size increased from 6.3 in the 1981 census to 7.0 in 1998 and declined to 6.4 in the 2017 census, while in KPK it increased substantially from 6.8 in 1981 to 7.9 in 2017.

Table 6
Average Number of Persons per Household by Province as
Reported in Household Sample Surveys and Censuses

	Punjab	Sindh	KPK	Balochistan
Census 1981	6.3	6.8	6.8	7.2
PDS* 1978-79 (average)	6.0	6.8	6.6	6.7
Difference between Census and PDS*	**0.3**	**0.0**	**0.2**	**0.5**
Census 1998	7.0	6.1	8.0	6.8
PDS* 1995-97 (average)	6.6	6.5	7.4	7.4
Difference between PDS* and Census	**0.4**	**-0.4**	**0.6**	**-0.6**
Census 2017	6.4	5.6	7.9	7.0
HIES** 2011-16 (average)	6.1	6.5	7.2	7.3
Difference between HIES*and Census	**0.3**	**-0.9**	**0.7**	**-0.3**

*Pakistan Demographic Survey : 1978-79 and 1995-97 | **Household Integrated Economic Survey : 2011-16
Sources: Federal Bureau of Statistics; Pakistan Bureau of Statistics and Census: 1981, 1998 and 2017

Two important observations in Table 6 are worth noting. While PDS conducted prior to the 1981 census indicate that the average household size in Sindh was the same as reported in the 1981 census, whereas in censuses conducted in 1998 and 2017, reported average household size in sample surveys conducted prior to the two censuses are much lower. On the other hand, in Punjab and KPK a much lower average household size is reported in household sample surveys conducted prior to each census. It is puzzling that a similar trend is not noted in the 1998 and 2017 censuses for Sindh –and to some extent in Balochistan– particularly when fertility levels in Sindh is higher than in Punjab and at the same level in KPK. Besides, increasing presence of recent migrants from KPK, FATA and

Southern Punjab is witnessed in Sindh, particularly in Karachi. Thus, as compared to recent sample surveys, an average of 0.9 person was under-reported in the 2017 census for each household in Sindh and 0.3 person was under-reported in Balochistan. On the other hand, in the 2017 census, on an average 0.3 additional persons in Punjab and 0.7 additional person was counted in KPK in household sample surveys. Could the lower average household size reported for Sindh and Balochistan in the 2017 census be due to underreporting of population in the two provinces? In the absence of a post-census enumeration survey, and any other demographic indicators for provinces, an indirect estimate of possible under- or over-counting of population is presented in Table 7, which suggests that it is likely that in the 2017 census about 5.7 and 2.8 million people were over-counted in Punjab and KPK, respectively. On the other hand, 7.9 and 0.6 million people were possibly undercounted or missed in Sindh and Balochistan, respectively. However, these calculations are based on the assumption, that the household sample surveys conducted by PBS during 2011-16 correctly estimated the average household size each year. If there was an error in ascertaining the number of persons living in the sampled household -which is the least sensitive information collected in HIES- then all the socioeconomic indicators generated by these surveys, which have been the basis of all the planning process in Pakistan, could also be questioned.

Table 7
Reported and Estimated Population and Under or Over counting in the 2017 Census by Province

	Average Household Size Reported in 2017 Census	Average Household Size Reported in HIES* 2011-16	Number of Households in 2017 census (million)	Estimated Population in 2017** (million)	Population reported in 2017 census (million)	Estimated Population under- or over-counted in the 2017 census** (million)
	(1)	(2)	(3)	(4) = (2)x(3)	(5)	(6)= (5)-(4)
Punjab	6.4	6.1	17.1	104.3	110.0	+5.7
Sindh	5.6	6.5	8.6	55.8	47.9	-7.9
KPK	7.9	7.2	3.8	27.6	30.5	+2,8
Balochistan	7.0	7.3	1.8	12.9	12.4	-0.6

*Household Integrated Economic surveys conducted during 2011-16 | **Author's calculations
Source: Pakistan Bureau of Statistics,

6.   DISTRICT LEVEL COMPARISONS: 1998-2017

Annual inter-censal growth rates and sex ratios as reported for each district in the four provinces in the 1998 and 2017 are presented in Table 8. As migrants in Pakistan are predominantly males, in the event a district has a higher growth rate, it could be due to the inflow of migrants, which could also reflect in a higher sex ratio (presence of more males). Conversely, a lower sex ratio in a district could be due to outflow of male migrants. Table 8 indicates quite variable population growth rates as well as sex ratios. As expected, Lahore, Peshawar and Quetta districts, where the respective capitals of Punjab, KPK and Balochistan are located, report substantially higher inter-censal annual growth rates than

the respective provinces, suggesting an in-flow of migrants to these districts, where sex ratios are also quite high. On the other hand, Karachi Division where the capital of Sindh is located, reports the lowest inter-censal growth rate but higher annual growth rate than the provincial average. Besides, Karachi reports the highest sex ratio among the four provincial capitals. Perhaps due to this discrepancy, undercounting of Karachi's population has been discussed in the media and thus, the validity of the 2017 census has been questioned in some well researched articles (Zaman, 2017; Karim 2017).

Table 8
Inter-censal Annual Growth Rates during 1998-2017 and Sex Ratios in 2017,
Provinces and Districts

Province/District	Annual Growth Rate 1998-2017 (%)	Sex Ratio 2017 (Males Per 100 Females)	District	Annual Growth Rate 1998-2017 (%)	Sex Ratio 2017 (Males Per 100 Females)
Punjab	**2.1**	**103.5**	**Lahore**	**3.0**	**109.9**
Sindh	**2.4**	**108.6**	**Karachi***	**2.6**	**110.9**
KPK	**2.9**	**102.7**	**Peshawar**	**4.0**	**106.5**
Balochistan	**3.4**	**110.6**	**Quetta**	**5.8**	**110.4**
PUNJAB					
Attock	2.1	99.0	Mandi Bahauddin	1.7	95.0
Bahawalnagar	2.0	103.3	Mianwali	2.0	100.3
Bahawalpur	2.2	105.1	Multan	2.2	105.6
Bhakkar	2.4	104.7	Muzaffargarh	2.6	105.5
Chakwal	1.7	93.8	Nankana Sahib	1.4	104.2
Chiniot	1.9	104.7	Narowal	1.6	97.0
Dera Ghazi Khan	3.0	102.0	Okara	1.6	106.1
Faisalabad	2.0	105.1	Pakpattan	1.9	103.6
Gujranwala	2.1	102.1	Rahim Yar Khan	2.3	105.2
Gujrat	1.6	94.0	Rajanpur	3.2	106.2
Hafizabad	1.7	102.2	Rawalpindi	2.5	103.0
Jhang	2.0	103.7	Sahiwal	1.7	103.6
Jhelum	1.4	97.0	Sargodha	1.7	102.2
Kasur	2.0	107.5	Sheikhupura	2.2	107.2
Khanewal	1.8	103.3	Sialkot	1.9	97.5
Khushab	1.8	99.2	Toba Tek Singh	1.6	100.9
Layyah	2.6	103.0	Vehari	1.7	101.9
Lodhran	2.0	103.0	--	--	--
SINDH					
Badin	2.6	106.9	Larkana	2.2	104.3
Dadu	1.8	106.0	Matiari	2.4	106.5
Ghotki	2.8	106.5	Mirpur Khas	2.1	106.9
Hyderabad	2.1	108.8	Naushahro Feroze	2.1	106.8
Jacobabad	1.7	105.0	Sanghar	2.4	107.3
Jamshoro	2.9	111.4	Shaheed Benazirabad	2.0	107.1
Kambar-Shahdad Kot	2.0	103.8	Shikarpur	1.8	106.5
Karachi-Central	1.4	108.2	Sujawal	2.2	108.4
Karachi-East	3.6	110.8	Sukkur	2.5	109.1
Karachi-Korangi	2.4	109.5	Tando Allahyar	2.8	107.1
Karachi-Malir	3.9	115.0	T. M.uhammad Khan	2.3	107.0
Karachi-West	3.4	111.8	Tharparkar	3.2	115.0
Karachi-South	1.0	111.3	Thatta	2.6	108.7
Kashmore	2.5	107.7	Umer Kot	2.6	108.1
Khairpur	2.3	106.6	---		

* Karachi Division is divided into six districts of Karachi-Central, Karachi-East, Karachi-West, Karachi-South, Korangi and Malir.

			Table 8 *(Continued)*		

Table 8 *(Continued)*
Inter-censal Annual Growth Rates during 1998-2017 and Sex Ratios in 2017,
Provinces and Districts

Province/District	Annual Growth Rate 1998-2017 (%)	Sex Ratio 2017 (Males Per 100 Females)	District	Annual Growth Rate 1998-2017 (%)	Sex Ratio 2017 (Males Per 100 Females)
KPK					
Abbottabad	2.2	103.4	Chitral	1.8	102.0
Bannu	2.9	103.3	Dera Ismail Khan	3.5	106.4
Batagram	2.3	99.9	Hangu	2.7	92.7
Buner	3.1	99.3	Haripur	2.0	98.8
Charsadda	2.4	103.1	Karak	2.6	97.9
Kohat	3.0	99.9	Shangla	3.0	103.5
Kohistan	2.7	124.4	Swabi	2.4	100.8
Lakki Marwat	3.1	101.7	Swat	3.2	103.2
Lower Dir	3.7	97.9	Tank	2.7	105.0
Mansehra	2.5	98.5	Torghar	-0.1	101.1
Mardan	2.6	102.5	Upper Dir	2.6	97.1
Nowshera	2.9	106.1	--	--	--
BALOCHISTAN					
Awaran	0.2	107.4	Lasbela	3.2	108.8
Barkhan	2.7	110.9	Lehri	1.5	108.7
Chagai	4.1	110.2	Loralai	2.5	114.9
Dera Bugti	2.9	110.1	Makran	3.1	117.0
Gwadar	1.9	116.5	Mastung	3.0	107.4
Harnai	1.2	115.1	Musakhel	1.2	117.5
Jaffarabad	3.0	104.3	Nasirabad	3.7	106.4
Jhal Magsi	1.6	106.3	Nushki	3.2	107.0
Kachhi	0.9	114.2	Panjgur	1.6	111.4
Kalat	2.9	105.6	Pishin	3.6	106.1
Kech	4.2	119.2	Sherani	3.4	124.8
Kharan	2.5	107.2	Sibi	1.4	112.1
Khuzdar	3.5	110.6	Sohbatpur	1.9	105.9
Killa Abdullah	4.0	110.4	Washuk	2.5	109.3
Killa Saifullah	3.1	113.0	Zhob	2.5	118.4
Kohlu	4.1	109.7	Ziarat	3.7	105.4
Source: Pakistan Bureau of Statistics,					

In Punjab various districts, e.g. Jhelum, Gujrat, Norwal, Nankana Sahib, and Toba Tek Singh report fairly low growth rates. In each of these districts, sex ratios are also low, except Nankana Sahib. On the other hand, Kasur reports an average annual growth rate, however, reports a higher sex ratio. Rajanpur reports the highest growth rate, where sex ratio is also high, similar to Lahore, apparently due to high rates of in-migration.

Karachi Division has six districts, of these; East, West and Malir (which also contain rural areas) report substantially higher annual growth rates. It is evident from high sex ratios in these districts, that there has been substantial in-migration to these districts. On the other hand, Central and South districts of Karachi report lowest annual growth rates in Sindh, which could be due to, either substantial decline in fertility rate in these district or people

have been moving out of the two districts. On the other hand, high sex ratios in Karachi South and Karachi Central indicate substantial inflow of migrants to these districts, but fairly low annual inter-censal population growth rates do not support this argument. It is therefore likely that there has been substantial undercount of population in the two districts, which needs to be investigated.   Similarly, Hyderabad district (where Sindh's second largest city is located) also reports fairly low annual growth rate, along with Jacobabad, Shikarpur, Kambar-Shadad Kot and Dadu, indicating out-migration from these districts, which is further substantiated by lower sex ratios in the last four districts. However, lower annual population growth rate is not corroborated with higher sex ratio in Hyderabad.   It is surprising that Tharparkar reports a substantially higher annual population growth rate along with higher sex ratio, indicating high rate of in-migration to the district.

In KPK, Torghar district reports fewer populations in 2017 than in 1998, thus showing a negative annual population growth rate. In Chitral and Haripur, population growth rates are also fairly low, which indicate out-migration. On the other hand, growth rates are substantially higher in Lower Dir, which also has a low sex ratio. Higher growth rates in Peshawar and Dera Ismail Khan, with correspondingly higher sex ratios, indicate considerable in-migration. On the other hand, Kohistan reports an exceptionally high sex ratio, which does not correspond with its average annual growth rate.

The most erratic situation is in Balochistan, where Awaran district shows negligible annual population growth rate during the inter-census period. Similarly, annual growth rates are fairly low in Kacchi, Panjgur, Gwadar, Lehri, Sibi, Musa Khel, Harnai, and Sohbatpur. On the other hand, high annual population growth rates are reported for pre-dominantly rural districts of Kech, Chagai, Kohlu, and Killa Abdullah. Although high population growth rate in Kech corresponds with very high sex ratio, however Musa Khel, Sibi, and Harnai report very low annual growth rates along with very high sex ratios. Sex ratios in districts of Balochistan could also be higher due to higher maternal mortality as well as under-reporting of females.

7.   URBANIZATION

In the 1951 census, an area with a municipal corporation, a town committee or cantonment was classified as urban. In addition, an area having less than 5,000 inhabitants but possessing certain urban characteristics such as common utilities, roads, sanitation, schools, centers of trade and commerce, with substantial population not involved in agriculture, were also declared as urban by the Provincial Census Directors (Arif, 2003). The same definition of urban areas was followed in the 1961 and 1972 censuses. However, starting with the 1981 census, only areas with municipal corporations, municipal

committees, town committees, or cantonments are considered urban localities and the criteria of declaring an area having 5,000 or more population or certain urban characteristics were dropped. But those areas which have been declared as urban by the provincial governments are also considered as urban.

Still as shown in Table 9, since 1951 the percentage of population living in urban areas of Pakistan has more than doubled from 17.4 percent to 36.4 percent in 2017. Thus, during the period, while urban population increased by about 13 fold, the rural population recorded only about 5 fold increase. If the 2017 census would have also followed the same definition of urban as adopted in 1951-1972 censuses (which included communities consisting of 5000+ inhabitants), the pace of urbanization in Pakistan would have been much faster and perhaps about 45 percent of the country's population would be classified as urban today, instead of 36 percent so classified in the 2017 census.

Table 9
Population and its Percentage Distribution by Urban and Rural Areas,
Provinces and Pakistan: 1951-2017

	1951		1961		1972		1981		1998		2017	
	Pop. million	Percent	Pop. million	Percent	Pop. million	Percent	Pop. million	Percent	Pop. million	Percent	Pop. million	Percent
Punjab												
Urban	3.57	17.4	5.48	21.5	9.18	24.4	13.05	27.6	23.02	31.3	40.39	36.7
Rural	16.97	82.6	19.99	78.5	28.42	75.6	34.24	72.4	50.60	68.7	69.63	63.3
Sindh												
Urban	1.77	29.2	3.17	37.9	5.73	40.4	8.24	43.3	14.84	48.8	24.91	52.0
Rural	4.28	70.8	5.20	62.1	8.43	59.6	10.79	56.7	15.60	51.2	22.98	48.0
KPK												
Urban	0.50	11.1	0.76	13.2	1.20	14.3	1.67	15.1	2.99	16.9	5.73	18.8
Rural	4.05	88.9	4.97	86.8	7.19	85.7	9.40	84.9	14.75	83.1	24.79	81.2
Balochistan												
Urban	0.14	12.4	0.23	16.9	0.40	16.5	0.68	15.6	1.57	23.9	3.40	27.5
Rural	1.02	87.6	1.13	83.1	2.03	83.5	3.66	84.4	5.00	76.1	8.94	72.5
Pakistan*												
Urban	5.99	17.7	9.65	23.1	16.59	25.4	23.84	28.3	43.04	32.5	75.58	36.4
Rural	27.75	82.3	32.23	76.9	48.72	74.6	60.41	71.7	89.32	67.5	132.19	63.6

* includes population of FATA and Islamabad
Source: Pakistan Bureau of Statistics

During 1951-2017, Balochistan experienced the fastest pace of urbanization or urban growth, followed by Sindh, KPK and Punjab.   However, the trend of urbanization in each province is quite different (see Table 10).   During the 1950s and 60s, the pace of urbanization was fastest in Sindh which was quite higher than Punjab and KPK but due to slowing down of urban growth in the former, all three provinces experienced the same pace of urbanization during 1981-1998, while during 1998-2017, Sindh experienced the slowest pace of urbanization, which needs to be investigated.

Table 10
Pace of Urban and Rural Growth during each
Inter-censal Period, Provinces and Pakistan: 1951-2017

Province	Percentage Increase during:				
	1951-1961	1961-1972	1972-1981	1981-1998	1998-2017
Punjab					
Urban	53.5	67.5	42.2	76.4	75.5
Rural	17.8	42.2	20.5	47.8	37.6
Sindh					
Urban	79.1	80.8	43.8	80.1	67.9
Rural	21.5	62.1	28.0	44.6	47.3
KPK					
Urban	52.0	57.9	39.2	79.0	91.6
Rural	22.7	44.7	30.7	56.9	68.1
Balochistan					
Urban	64.3	73.9	70.0	130.9	116.6
Rural	10.8	79.6	80.3	36.6	78.8
Pakistan					
Urban	61.1	71.9	43.7	80.5	75.6
Rural	16.1	51.2	24.0	47.9	48.0

Source: Pakistan Bureau of Statistics

As shown in Table 11, during the 1951-1972 periods, the difference between urban and rural growth rate was quite wide for the country. However, during 1998-2017, a substantial decline in the urban annual population growth rate from 5.0 percent to 2.7 percent is recorded, while the rural growth rate declined only marginally. Consequently, the difference between urban and rural annual population growth rates in the country has narrowed down substantially. In fact with the exception of Punjab, it has almost disappeared in other provinces. The rapid decline in urban annual growth rate could be due to a decline in urban fertility coupled with either a decline in rural-urban migration, or change in the definition of urban areas, as discussed above. However, undercounting of urban population cannot be ruled out, as a result of de jure method used in the census.

Table 11
Trends in Inter-censal Annual Growth Rates, by Urban-Rural Areas, Provinces and Pakistan: 1951-2017

Province	1951-1972			1981-98			1998-2017		
	Urban	Rural	Difference*	Urban	Rural	Difference*	Urban	Rural	Difference*
Punjab	4.6	2.5	2.1	3.3	2.2	1.1	2.7	1.8	0.9
Sindh	5.8	3.3	2.5	3.5	2.1	1.4	2.5	2.4	0.1
KPK	4.2	2.8	1.4	3.5	2.6	0.9	3.0	2.9	0.1
Balochistan	5.1	3.3	1.8	4.8	1.9	2.9	3.5	3.3	0.2
Pakistan	**5.0**	**2.7**	**2.3**	**3.5**	**2.2**	**1.3**	**2.7**	**2.2**	**0.5**

* between urban and rural inter-censal annual growth rates
Source: Pakistan Bureau of Statistics

8. GROWTH OF CITIES

In most of the districts (Division, in the case of Karachi) which contain the 10 largest cities of the country, rural areas experienced a faster inter-censal annual growth rates than the urban areas in the same district (see Table 12). This indicates that migrants moving to these cities are settling in the outskirts of these cities. Thus, while surrounding areas of most cities have become suburbs of these cities, but remain classified as rural. However, since only in the case of Lahore the entire district was declared as urban, prior to the 2017 census, it reports the highest annual growth rate.

Table 12
Urban and Rural Population Distribution in the 10 Largest Districts of Pakistan
and their Annual Inter-censal Growth Rates: 1998-2017

District	Population (million)		Percent of Population in Urban/Rural Area		Annual Growth Rate (%)	Sex Ratio 2017
	1998	2017	1998	2017	1998-2017	
Karachi*						
Urban	9.45	14.91	95.9	92.9	2.43	110.7
Rural	0.41	1.14	4.1	7.1	5.56	113.5
Lahore						
Urban	5.21	11.13	82.2	100.0	4.07	109.9
Rural	1.13	-------	17.8	0.0	-----	------
Faisalabad						
Urban	2.32	3.76	42.7	47.8	2.57	105.7
Rural	3.11	4.11	57.3	52.2	1.48	104.6
Rawalpindi						
Urban	1.91	2.88	56.7	53.2	2.18	106.0
Rural	1.46	2.53	43.3	46.8	2.95	99.6
Gujranwala						
Urban	1.88	2.95	55.2	58.8	2.40	103.3
Rural	1.52	2.07	44.8	41.2	1.61	100.4
Peshawar						
Urban	0.98	1.97	48.5	46.1	3.72	108.7
Rural	1.04	2.30	51.5	53.9	4.23	104.6
Multan						
Urban	1.43	2.06	45.8	43.4	1.94	106.5
Rural	1.69	2.69	54.2	56.6	2.47	105.0
Hyderabad						
Urban	1.26	1.83	84.4	83.3	1.98	109.1
Rural	0.23	0.37	15.6	16.7	2.40	107.2
Quetta						
Urban	0.57	1.00	73.0	44.0	3.05	112.3
Rural	0.21	1.27	27.0	56.0	9.96	108.9
Islamabad	**0.81**	**2.01**				
Urban	0.53	1.02	63.0	50.6	3.5	113.7
Rural	0.28	0.99	37.0	49.4	6.9	108.4

*Karachi Division is divided into six districts (see table 9)
Source: Pakistan Bureau of Statistics

In Pakistan, cities with a population of over one million inhabitants increased from three in 1981 to seven in 1998 and to ten in 2017. As shown in Table 13, during 1981-1998, Islamabad was the fastest growing city, with an inter-censal annual growth rate of about 6 percent, followed by Quetta with an annual growth rate of 4 percent, while Karachi, Rawalpindi, Faisalabad and Gujranwala reported annual growth rates of 3.5 to 3.8 percent. With the exception of Hyderabad, seven of the other largest cities had inter-censal annual growth rate of over 3 percent. During 1998-2017, annual growth rates in all the cities have declined substantially with the exception of Lahore, mainly due to the entire district of Lahore (whose about 18 percent of population was rural in 1998) was declared urban by the Government of Punjab, prior to the 2017 Census.

Table 13
Population of Pakistan's Ten Largest Cities, their Rank Size and Inter-censal Annual Growth Rate: 1981-2017

City	Population in million and (Rank Size)			Annual Growth Rate (percent)	
	1981	**1998**	**2017**	**1981-1998**	**1998-2017**
Karachi	5.21 (1)	9.34 (1)	14.91 (1)	3.5	2.5
Lahore	2.95 (2)	5.14 (2)	11.13 (2)	3.3	4.2
Faisalabad	1.10 (3)	2.01 (3)	3.20 (3)	3.6	2.5
Rawalpindi	0.79 (4)	1.41 (4)	2.10 (4)	3.5	2.1
Gujranwala	0.60 (7)	1.13 (7)	2.03 (5)	3.8	3.1
Peshawar	0.57 (8)	0.98 (8)	1.97 (6)	3.2	3.7
Multan	0.73 (5)	1.20 (5)	1.87 (7)	3.0	2.4
Hyderabad	0.75 (6)	1.17 (6)	1.73 (8)	2.7	2.1
Islamabad	0.20 (10)	0.53 (10)	1.01 (9)	5.9	3.9
Quetta	0.27 (9)	0.57 (9)	1.00 (10)	4.0	3.4

Source: Pakistan Bureau of Statistics

Index of Primacy is often used, to compare the largest city of a country with the next three largest cities (Shryock and Siegel, 1973). Table 14 demonstrates the position of Karachi (Pakistan's largest city) in terms of its inter-censal annual growth rate and the Index of Primacy. During 1951 and 2017, Karachi has grown over 13 fold, slightly higher than the urban growth in Pakistan. Thus, Karachi's share in Pakistan's urban population increased from 18 percent in 1951 to 21 percent in 1998; however, due to reported decline in Karachi's growth rate during the past 19 years, its share has declined to below 20 percent in 2017. Consequently, in 2017 the Index of Primacy for Karachi has also declined, suggesting that while in 1981, the country's largest city contained about 7 percent more inhabitants than the combined population of the country's next three largest cities (Lahore,

Faisalabad, and Rawalpindi) which declined somewhat in 1998. However, it may be noted, that the 1998 census had counted about 11.1 million people in Karachi city, but since about 1.8 million were considered as illegal aliens (being non-citizens of Pakistan), officially Karachi's population was declared as 9.34 million. The Index of Primacy for Karachi has declined substantially in 2017 census to 0.90, indicating that since 1981 Karachi's stature vis-à-vis the three other largest cities (Lahore, Faisalabad, and Rawalpindi) has been reduced by 17 percentage points.

Table 14
Population of Karachi, Pakistan's Largest City, its Inter-censal Annual Growth Rates, Share in Pakistan's Total Urban Population and the Index of Primacy: 1951-2017

Census Year	Population (million)	Inter-censal Annual Growth Rate (percent)	Share of Karachi in Pakistan's Total Urban Population (percent)	Index of * Primacy
1951	1.07	9.4	18.0	0.81
1961	1.91	6.0	19.4	0.89
1972	3.51	5.7	21.2	0.97
1981	5.22	4.5	21.9	1.07
1998	9.34	3.4	21.8	1.05
2017	14.9	2.5	19.7	0.90

* Index of primacy is the population of the largest city (Karachi) in the country divided by the combined population of 2nd, 3rd and 4th largest cities (Lahore, Faisalabad and Rawalpindi)
Source: Pakistan Bureau of Statistics

The likelihood of substantial under-count of Karachi city's population in the 2017 census is further demonstrated in Table 15, where out of 23 Sub-Divisions in urban Karachi; two reported to have lost their population, thus had negative population growth rates during 1998-2017, indicting out-flow of population from these two areas; four had very low inter-censal annual growth rates (below 1 percent); ten experienced lower growth rate than the national average (below 2.4 percent); while only five experienced growth rates of above three percent, which is not an usual growth rate for a metropolitan area. Interestingly, Sub-Divisions which are pre-dominantly rural, with the exception of one, report having experienced substantially higher growth rates, which is likely due to expansion of these communities due to in-migration. In cantonment areas of Karachi which are located inside the city limits, population growth rate has been slow, even though various high rise apartment buildings have been constructed there over the past two decades. On the other hand, in cantonments located in suburbs, very high growth rates are recorded, indicating high volume of in-migration to these areas. Unfortunately, due to the dropping of Form 2-B in the 2017 census, which collected demographic data (births, deaths and migration), it is not possible to explain reasons for inconsistent population growth in different Sub-Divisions of Karachi. This issue could be addressed if a comprehensive demographic survey is undertaken, with representative samples drawn at Sub-Division level, perhaps by Sindh Bureau of Statistics.

Table 15
Percentage Population Growth and Inter-censal Annual Growth Rates
in Sub-Divisions and Cantonment Areas of Karachi Division during 1998-2017

Sub-Division	Population Growth during 1998-2017 (%)	Inter-censal Annual Growth Rate (%)	Sub-Division	Population Growth during 1998-2017 (%)	Inter-censal Annual Growth Rate (%)
URBAN AREAS					
Baldia	105.0	3.8	Gulberg	16.8	0.8
S.I.T.E	25.8	1.2	Liaqatabad	18.3	0.9
Mominabad	41.9	1.9	Nazimabad	23.2	1.1
Orangi	54.4	2.3	New Karachi	49.5	2.1
Harbour	86.3	3.3	Shah Faisal	19.7	0.9
Lyari	11.4	0.6	Model Colony	52.1	2.2
Garden	12.2	0.6	Landhi	35.2	1.6
Arambagh	-2.7	-0.1	Korangi	103.9	3.8
Saddar	-13.8	-0.8	Ferozabad	36.1	1.6
Civil Line	57.0	2.4	Jamshed Quarters	24.5	1.2
North Nazimabad	34.2	1.6	Gulshan-e-Iqbal	85.5	3.3
RURURAL AND PART URBAN AREAS					
Airport	146.1	4.9	Gulzar-e-Hijri	539.7	10.3
Mauripur	124.2	4.3	Shah Mureed	82.4	3.2
Bin Qasim	128.7	4.5	Murad Memon	50.9	2.2
brahim Hyderi	138.3	4.7	----	----	----
CANTONMENTS					
Faisal	165.2	5.3	Karachi	18.6	0.9
Manora	-41.3	-2.8	Korangi Creek	69.0	2.8
Clifton	67.6	2.8	Malir	212.7	6.2

Source: Pakistan Bureau of Statistics

9. CONCLUSIONS

Census data are essential for the prospective planning in any country. Since after the 18th amendment in Pakistan's constitution, social sector has been devolved to the provinces, it is extremely important that for planning at the provincial and local levels, accurate and timely census data are collected and made available, which is responsibility of the Federal Government. Census enumeration in Pakistan has suffered from several deficiencies, which include lack of planning, under or over-counting due to flawed methodology, absence of any validity checks and unnecessary delays in conducting the census. Although, the census enumeration in Pakistan had improved substantially from the first to the fourth census, which were also conducted according to schedule –with the exception of 1971 census, which was delayed for a year. The 1981 census was not only conducted as scheduled, but was perhaps the best census conducted in Pakistan. Since the 1991 and 2011 censuses

were postponed for over-reporting in the housing census in some areas and political considerations, the fifth census was conducted after a gap of 17 years and the sixth after a gap of 19 years. These gaps have created substantial vacuum in the census organization which was merged with Pakistan Bureau of Statistics, so much so, that by 2017 most senior staff had retired and in PBS had no senior person with experience of conducting a census. Thus, on the one hand, the census operation was quite disorganized and on the other hand, due to likely political motives, suspicions have been raised, thus questions are being raised by different quarters, about the accuracy as well as quality of the 2017 census data.

Consequently, following the release of provisional results of the 2017 census, not only the print and electronic media has shown several reservations about its validity, but in the meeting of Council of Common Interest (CCI) held in December 2017, under the chairmanship of the Prime Minister, Sindh's Chief Minister raised the issue of possible undercounting of Sindh's population. Since the international standards of cross-validation of the census results were not followed by Pakistan Bureau of Statistics, a meeting was held in the Senate of Pakistan and an all parties agreement was signed by Senators from all the Federating units. Consequently, it was agreed in the next CCI meeting that a validation survey will be conducted in 5% of randomly selected census blocks from all over the country, by a third party and the results will be validated after cross checking with the enumeration done in these blocks in the 2017 census. For the purpose a "Census Commission" of three prominent demographers was also notified by the Government of Pakistan to supervise the validation survey. The Commission had its first meeting on January 7, 2018 which was also attended by four other senior demographers along with the Secretary of the Ministry of Statistics and other senior officials from PBS. There was a general consensus among the experts who attended the meeting, that the 2017 census suffered from several flaws and it will be appropriate to conduct a third-party validation exercise. However, since then the Commission has not met.

The final results of the 2017 census have been compiled, but are not yet released due to objections raised in the last CCI meeting. Perhaps the best course would be to let the Census Commission examine if indeed data suffer from coverage and contents errors in certain areas. However, without a validation survey, over or undercounting in specific areas of the country cannot be detected. Thus, without the validation of the 2017 census, its results may remain disputed, which could lead to discontent in areas which claim to have been under-enumerated. Besides, if there has been inaccurate counting in the 2017 census, it could result in disastrous policy planning, particularly at provincial and local level.

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ANNEXURE 1

Extracts* from
**Report on Technical Evaluation of
6th Population & Housing Census-2017**

Statistics Division, Ministry of Statistics,
Government of Pakistan, Islamabad

May 2018

*Summarized and edited for language**.**

ANNEXURE 1

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Incomplete Updating of Rural Area Maps and Frame

Recommendations by National Experts and International Agencies

Attention and vigilance must be kept at all times on the delineation to make sure that there are no overlaps or gaps between EAs, and this particularly in rural areas where maps might not be 100% accurate. Specific attention must be also given to the "mixed-areas" where rural and urban areas co-exist. Because rural and urban maps are from two different sources, proper attention will have to be given to territories with borders between rural and urban areas to make sure that they are no overlap or gap. To make sure that the delineation is correct and that the two types of maps are synchronized, it had been advised to test the cartography and mapping during a pilot census.

Status of Implementation and Comments

GIS maps were not fully prepared for the creation of the Enumeration blocks. Overlapping or gaps between enumeration areas have been reported by the provinces, during the census operation. The exercise of pilot census was not undertaken by PBS, which would have been helpful in assessing the nature of problems, in order to develop the mitigation measures. During the census, Pakistan Army pointed out during meetings that hand drawn block maps were not accurate and now Election Commission was also complaining about poor quality of these maps. Some newspapers also highlighted this issue which left question marks on the credibility of PBS.

Map updation work, started actually soon after House listing operation in 2011, but could not be completed till 2016. During the period of 5 years whatever have been done regarding updation was not up to the standard and therefore not usable. This position was a setback to the census operation and needs to be looked into and investigated in detail.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Urgent Need for Financial Audit.
Contributions made by Development Partners, is missing from actual budget utilized for Census, 2017.

Recommendations by National Experts and International Agencies

Financial Audit is strongly recommended, by members of Technical Evaluation Committee, under the advice from the members of Supervisory Expert Group.

Status of Implementation and Comments

In this connection, it is proposed that Head-wise accounts details need to be audited, on urgent basis. In a meeting arranged with the Provincial stakeholders on February 20, 2018, regarding technical evaluation/audit of the census, 2017, provinces showed reservations, in this regard.
Moreover, details regarding Development Partner's contributions in the budget utilized for the census, 2017, also needs to be looked in detail, supplemented by the necessary financial audit.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Need for Accountability regarding technical support to PBS by UNFPA

Recommendations by National Experts and International Agencies

Several capacity building and trainings programmes have been mentioned by UNFPA, that had been arranged for PBS staff, during last 8-9 years.

Status of Implementation and Comments

In actual situation, mostly untrained/raw staff have been utilized, in the census operations. Thus, there is need to look into which staff had been trained by UNFPA and why their services had not been utilized during the census operation. Moreover, details regarding Development Partner's contributions in the budget utilized for the census, 2017, also needs to be looked at in detail, supplemented by the necessary financial audit.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Timed out Planning for Designing/ Development of census communication.

Recommendations by National Experts and International Agencies

UNFPA Consultant recommended that PBS should urgently consider creating publicity census communication teams at national level (four to five staff members plus a consultant) who would only concentrate on the much needed communication strategy and logistics. Mirroring publicity teams, should be created without delays at the local levels (regions, provinces, territories and districts), so that they be ready to put the advocacy and publicity strategy in place three months prior to the census.

Status of Implementation and Comments

Communication and publicity campaign was not planned on time and it was not designed in the manner as was advised/recommended.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Post Enumeration Survey(PES) was missing from the Monitoring & Evaluation tools, coupled with non-effective utilization of tools developed for the purpose.

Recommendations by National Experts and International Agencies

To give legitimacy and credibility to the census, the Sub-Committee constituted by the Governing Council of PBS stressed in almost all meetings right from the beginning to ensure the need for implementing PES.

Status of Implementation and Comments

Recommendation regarding conducting PES was shot down by the responsible authorities of PBS, as pointed out by the Chair of the Sub-Committee of the Governing Council, in the Sub-Committee report of September, 21, 2017.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

No Design for Assessing Quality of Census Data through Quality Control Form (FQC)

Recommendations by National Experts and International Agencies

A Quality Control Form such as FQC is quite useful as it will not only give the opportunity to have a direct and quick control on the data collection itself during the census, but it will also provide a tool for monitoring and evaluation which will be very valuable in the absence of PES.

Status of Implementation and Comments

No design or plan for Utilization of FQC form, in assessing the quality of data collection, has been found available, from any of the teams working on Census, 2017.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Plan for Deputing International/National Monitoring/Observation Mission, to oversee the enumeration process, for enhancing credibility of the census.

Recommendations by National Experts and International Agencies

In many countries national and international monitoring and observation missions have proven to be effective in enhancing census credibility. Therefore, it was recommended by the census Sub-Committee of the Governing Council, in its meeting held on February 11, 2017 to consider such a mission composed of national and international monitors, who specialized in census data collection stressing the need for inclusion of someone from Statistics Division. During the same meeting, the UNFPA Consultant informed that her organization is ready to provide services of consultants to PBS.

Status of Implementation and Comments

PBS had adopted this option, however, there was no representation from Statistics Division, as recommended by the Census Sub-Committee of the Governing Council.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Dropping of Long Form(Form -2A) from the main census operation as per the following decision of Council of Common Interests (CCI) dated December 16, 2016: "House Listing and Census Operation may be carried out in one go. Form -2 only may be used in Census Operation, while Form -2A may be filled in on sample basis, after the Census Operation is over." Consequently, the long form (Form-2A) was dropped, from main Census Operation.

Recommendations by National Experts and International Agencies

By dropping Long form, to be filled on sample basis, major chunk of data relating to various socio-economic indicators such as fertility, mortality, migrations, employment and nature/cause of disability, could not be collected.

Status of Implementation and Comments

As per details mentioned in working papers of the 13th and 14th meeting of the Governing Council, held during October and November, 2017 the proposal was to launch the field operation of Form-2A, during the months of April and May, 2018, subject to the approval of Governing Council, before submitting summary to CCI. It has not been implemented by PBS.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Limitations in Trainings Imparted.

Recommendations by National Experts and International Agencies

Training syllabus had to be designed specifically for each level/tier of trainers/trainees. PBS needed to train supervisors and enumerators together to get the supervisors acquainted with their enumerators. This idea would not work well as both categories of field workers do not exactly do the same job. However, it was agreed that enumerators and supervisors, should be trained together with last specific day of training for supervisors only. During enumerators' training, a session on inter-personal communication was to be included. Training regarding mapping, area listing and their delimitation into census areas had also been included as one of the component of census training. A separate training session was recommended by the Sub- Committee of the Governing Council, for Vigilance Teams including use of audio/visual aids during the training sessions

Status of Implementation and Comments

Trainings had not been organized with respect to the level of trainers/trainees. Recommendations regarding trainings were not followed completely.   Actually training on map reading needed to be integral part of the training on census. This recommendation was not considered by the concerned authorities of PBS. Besides, very limited use of Audio/Visual aids was employed for imparting training to the Master Trainers and then by the Master Trainers, while training the trainers. It could not be established for sure that whether Audio/ visual aids were employed, while imparting training to the field staff.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Monitoring of Training Sessions

Recommendations by National Experts and International Agencies

Training sessions at every level, need to be monitored, to ensure the quality of trainings imparted.

Status of Implementation and Comments

Training sessions were neither monitored by PBS nor by any third party.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Gaps in Launching of Advocacy and Publicity Campaign.

Recommendations by National Experts and International Agencies

The advocacy and publicity campaign need to be launched not later than three months before the census keeping in mind the fact that people had not participated in a Population and Housing Census for almost twenty years so time must be allowed for the population to understand buy in, accept and "own" the head count. Recommendation for endorsing the census operation by some popular personalities first of all by the President of Country and thereafter by some renowned personalities. Besides:

- School children can be a very useful channel of disseminating census information if a census message may be included in their school assembly announcements for at-least one month before census. For long term, possibilities of including census on the school curriculum also need to be explored.
- Mosques and other religious congregations can also play a central in disseminating census messages by making announcements, four weeks prior to enumeration.
- During Enumeration, enumerator is face of the census. Therefore, enumerators are provided with very visible uniforms vests (bearing census logo and slogan) as the uniforms may help people in identifying census workers.
- TV documentary depicting the enumeration process should be done with the enumerators wearing these uniforms.
- Quick awareness Survey as a part of pilot census should be conducted to assess the awareness levels and to establish the best communication channels

Status of Implementation and Comments

Question on "disability" was not been included in Form 2. However, at the eleventh hour, upon the order of Supreme Court, this question was added and advised to be enquired by the enumerators, who were already in the field, who might or might not have been timely informed about asking this additional question. Besides, nature and cause of disability was not asked.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Reservations regarding Recording of CNIC and its verification through NADRA database

Recommendations by National Experts and International Agencies

It was mostly verified through SMS sent to NADRA, which is against the basic principles and procedures of census (it was a Breach of Confidentiality).

Status of Implementation and Comments

Age records and other information were mainly obtained from CNIC and recommendation was not followed.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Non effective utilization of Control Room-Receiving/Redressal of Public Complaints About Enumeration.

Recommendations by National Experts and International Agencies

Establishment of control rooms was good initiative to receive and redress the public complaints about enumeration, however, this need to be regularized through senior staff with a centralized control room along-with proper recording/documentation of public complaints.

Status of Implementation and Comments

Control rooms were mainly regulated by Lower class officials and no proper record, in this connection, had been maintained by PBS, to ensure the authenticity & credibility of Census Operation, 2017.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Non Effective Utilization of Control Room-Receiving/ Redressal of Public Complaints About Enumeration.

Recommendations by National Experts and International Agencies

Establishment of control rooms was good initiative to receive and redress the public complaints about enumeration, however, these need to be regularized through senior staff with a centralized control room along-with proper recording/documentation of public complaints.

Status of Implementation and Comments

Control rooms were mainly regulated by Lower class officials and no proper record, in this connection, had been maintained by PBS, to ensure the authenticity and credibility of census operation.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

No Performance Evaluation mechanism was developed for Coordination Committees at Provincial/ Admin District / Census District level.

Recommendations by National Experts and International Agencies

Formulation of Coordination Committees was good initiative, for coordination of census operations, if proper mechanism with performance evolution may be designed for the same.

Status of Implementation and Comments

Working/Contributions made by these Committees at various stages of census operation have not been recorded or reflected anywhere, on the website of PBS. Therefore, it is not possible to gauge/assess that how effectively these committees had contributed towards successful operation of the census. Further, no evaluation measures have been devised for working of these Committees/Bodies. Mechanism for inter-coordination and intra –coordination, for these committees, is not clear.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Unjustified Role of Vigilance Teams at Census District level as Monitors of Census Work.

Recommendations by National Experts and International Agencies

In the 5th meeting of the Sub-Committee of Governing Council Of PBS held on 25th February, 2017, following team formation had been proposed for Tehsil level Vigilance Teams:

- Representative from armed forces.
- Representative from Pakistan Bureau of Statistics.
- DEO, Deputy DEO, TMO (Tehsil Municipal Officer), CEO (Cantonment Executive Officer) etc.
- Media representative.
- Local Community based rights organization.
- Women's organization.

Status of Implementation and Comments

Recommendation by the Sub-Committee of Governing Council of PBS was not followed. Further, it is not clear from documentation of PBS whether Vigilance Teams were appointed at Provincial, Divisional, Admn District and at Census Distict level or these are only at Census District level. There are controversies in various documents of PBS. Notification regarding Vigilance teams and their TORs had not been provided by the concerned section of PBS.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

No utilization of Documented Instructions for Manual Editing and Coding.

Recommendations by National Experts and International Agencies

Instructions for manual editing & coding, had been developed, by the PCO Wing, but not reported to be given to the Editors, for time to time consultations and to ensure accuracy of work done by the Editors.

Status of Implementation and Comments

These documented instructions have not been given to the teams engaged in manual editing and coding. They had been given only verbal instructions, in this regard.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Use of Quality Control Form (FQC) in assessing Census Data Quality, is not clear.

Recommendations by National Experts and International Agencies

PBS had developed a Quality Control Form (FQC) that had to be administered by Supervisors, to control the coverage and quality of enumeration.

Status of Implementation and Comments

It has not been informed by any concerned section of PBS, what signals they had got from this Quality Control Form (FQC) about the quality of data.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Ineffective Role of Provincial Technical Committees for Census-2017.

Recommendations by National Experts and International Agencies

Following were the 3 TORs for Provincial Technical Committee for Census, 2017:
  i) Monitor data entry /scanning of information from Census filled-in questionnaires.
  ii) Monitor data processing at the H/Q of PBS and ensure that all parameters are equally applied to all provinces.
  iii) Keep informed the Provincial Governments/ FATA Secretariat, on the developments on the compilation of Census data and submit a report on completion of the process.

Status of Implementation and Comments

Though Technical Committees were formulated by all the provinces and FATA, however, neither the committees played their role effectively, by following their TOR(s), in true letter and spirit nor PBS made positive efforts to exploit this opportunity in its favour, by getting a satisfactory report, from all the provinces and FATA, besides developing a proper timely mechanism, for receiving and redressing of objections/ complaints, received , in this connection.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Incomplete Accomplishment of task, mentioned in TOR of Communication Consultant.

Recommendations by National Experts and International Agencies

One of the tasks assigned to the **Communication Consultant** was to Elaborate, Coordinate and Support PBS in managing all its publication activities including content management norms of publication and design to oversee production and supervision of publications dissemination.

Status of Implementation and Comments

This task could not be accomplished by the consultant as this stage of activities had not been reached during the period of his stay. Further, no preparatory exercises have been carried out by PBS in this connection. No alternative proposal had been developed by PBS, to be get benefitted from this opportunity.

Areas of Concern in the Preparatory/ Planning Phase of Census, 2017

Sharing Clean Data of Census, 2017 with Demographers.

Recommendations by National Experts and International Agencies

During 1st meeting of the Census Commission held on 17th January, 2018, it was proposed that clean Data of Census, 2017 must be shared with the demographers for technical evaluation using standard data analysis tools and to assess the quality of data through statistical tools, if they are satisfied with the final results, then Census Commission should convince the Senators Committee not to go for PES/Validation exercise.

Moreover, as early as in Dec, 2016, UNFPA had recommended for sharing of a representative sample of the micro-data with Population Experts within the Pakistan and through the public-access census platform of iPUMS.

Status of Implementation and Comments

This recommendation needs to be implemented in true letter and spirit, to ensure the transparency and enhance credibility and authenticity of Census Operation.

Strategy Proposed by the Sub-Committee of Governing Council Of PBS for Release of Census Results

During 5th meeting of the Sub-Committee held on 25th February, 2017, following strategy was proposed for release of provisional result:

The release of results should be done in three phases:-

1. Initial (**preliminary**) results about HH counts/structure counts at circle level/charge level should be released within **three months** of census. (As block formation is different from 1998 census, so circle or charge level counts should be compared with projected figures.) These should be release **electronically** only.
2. Total persons/total male, total female and other aggregated figures **(preliminary figures)** should be released **within six months** after census. These should also be released **electronically.**

All other **detailed information** (like age-wise distribution, education, religion etc.) at village level should be release in the form of Tehsil Census Report (publication as well as electronic tables) **within one year** of census launching dates (after detailed debate and opinion from demographic experts and other stakeholders on preliminary figures).

Strategy Adopted by PBS for Release of Provisional Results

*   Provisional results were compiled from Summary Form (REN-2) of 168,943 blocks and presented to CCI, on 25th Aug., 2017, after cross checking with ICR Form -2 Registers of 8% Blocks of each district.
*   Provisional Summary Results was provided at National, Provincial, Divisional and Administrative District, Tehsil, Charge, Circle and Block level with rural / urban breakdown.
*   Data on males, females, transgender and total population, average annual growth rate, provincial shares in the total population, sex ratio and big cities.

Nine Points Agreed for PES, by the Senators Committee

i.   Five percent population blocks for PES will be randomly selected by computer.
ii.   Three members Census Commission of reputed demographers would be appointed by mutual consultation of supervise the PES.
iii. A Committee consisting of Senator Mushid Hussain, Senator Mir Hasil Bezenjo, Senator Mushid Ullah Khan and Senator Taj Haider shall monitor and exercise oversight on the conduct of PES.
iv.   PES in all selected blocks will be held on Holiday and all members of a household present in a house on that day shall be counted.
v.   Special provision will be made for counting internally Displaced Persons (IDPs), Nomads and Temporarily Displaced Persons (TDPs) in the light of scientific advice given by the census commission.
vi.   Returnable Templates supplied by United Nation's Offices in Islamabad will be used for enumeration and count of every house will be sent online to the PBS and Provincial Governments.
vii. The final report of the PBS shall be submitted within 30 days of the start of the PES.
viii. Deviation with the provisional census-2017 figures beyond plus minus one percent shall be incorporated in the final count of the census-2017.
ix.   All political parties attending the meeting of the 15th December, 2017 presided over by the Honorable Prime Minister of Pakistan undertake to vote for the 24th Constitutional Amendment Bill in the Senate on Tuesday, December 19, 2017.

Observations and Recommendations

It is a necessary part of any Census to conduct a post-enumeration survey within a few months of the larger enquiry to validate its accuracy and to be able to "adjust' the results for any omissions and large-scale errors. Unfortunately, despite the strong recommendation by the Census advisory committee, this advice was not considered. The 3 Member Commission formulated to supervise the Post Enumeration Survey met in conjunction with six other prominent demographers and made their recommendations accordingly.

A serious alternative to consider is an Analytical validation of the Census results to be undertaken by the three-member Census Commission along with political representatives who can themselves purposively select a 5% sample of results from the 2017 Census. These results can be thoroughly evaluated for their internal reliability against past Census results comparing, age structures sex ratios. The Census commission can put up for scrutiny any glaring omissions or discrepancies and propose adjustments to the data that can be incorporated in the final results.

List of
SPDC's Publications

ANNUAL REVIEWS OF

SOCIAL DEVELOPMENT IN PAKISTAN

SPDC-AR, Social Development in Pakistan: Annual Review 2014-15
(*The State of Social Development in Urban Pakistan*)

SPDC-AR, Social Development in Pakistan: Annual Review 2012-13
(*The State of Social Development in Rural Pakistan*)

SPDC-AR, Social Development in Pakistan: Annual Review 2011-12
(*Devolution and Social Development*)

SPDC-AR, Social Development in Pakistan: Annual Review 2009-10
(*Social Impact of the Security Crisis*)

SPDC-AR, Social Development in Pakistan: Annual Review 2007-08
(*Women at Work*)

SPDC-AR, Social Development in Pakistan: Annual Review 2006-07
(*Devolution and Human Development in Pakistan*)

SPDC-AR, Social Development in Pakistan: Annual Review 2005-06
(*Trade Liberalization, Growth and Poverty*)

SPDC-AR, Social Development in Pakistan: Annual Review 2004
(*Combating Poverty: Is Growth Sufficient?*)

SPDC-AR, Social Development in Pakistan: Annual Review 2002-03
(*The State of Education*)

SPDC-AR, Social Development in Pakistan: Annual Review 2001
(*Growth, Inequality and Poverty*)

SPDC-AR, Social Development in Pakistan: Annual Review 2000
(*Towards Poverty Reduction*) (Urdu summary is also
available)

SPDC-AR, Social Development in Pakistan: Annual Review 1999
(Social Development in Economic Crisis)| (Urdu
summary is also available)

SPDC-AR, Social Development in Pakistan: Annual Review 1998

RESEARCH REPORTS

RR-100, Explaining Spousal Physical Violence through Dimensions of
Women Empowerment: Evidence from Pakistan

RR-99, Poverty and Vulnerability Estimates: Pakistan, {2016]

RR-98, Political Economy of Social Development in Pakistan, [2016]

RR-97, Citizens' Perceptions of Urban Public Services [2016]

RR-96, Quantifying Sub-National Human Development Indices
from Household Survey Data, [2016]

RR-95, State of the Economy: An Evaluation of the Federal Budget
2015-16

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