



7th Population and Housing Census-2023

“FIRST-EVER DIGITAL CENSUS”



PUNJAB

PROVINCIAL CENSUS REPORT





7th Population and Housing Census-2023

(First-ever Digital Census of Pakistan)



PROVINCIAL CENSUS REPORT

PUNJAB

Government of Pakistan

Ministry of Planning Development and Special Initiatives

Pakistan Bureau of Statistics

Mauve Area, G-9/1, Islamabad, Pakistan

www.pbs.gov.pk



Foreword



Professor Ahsan Iqbal
Minister for Planning, Development
and Special Initiatives

The 7th Population and Housing Census-2023, in pursuance of the decisions made in 49th meeting of Council of Common Interests (CCI), was conducted digitally in the country during March to May, 2023. The exercise was accomplished by the Pakistan Bureau of Statistics with the assistance of national agencies, NADRA, NTC and SUPARCO, and cooperation of provincial and district administration in providing all kind of administrative and human support and Armed Forces for providing security during the whole census process including the Pilot Census and Post Enumeration Survey of the Digital Census. I extend my sincere gratitude to the officers and staff of Provincial Government Departments, as well as the personnel of the Armed Forces, who played a pivotal role in the success of this operation. Their

dedication and involvement were truly commendable.

I would also like to extend my congratulations to the entire staff of PBS for their untiring efforts. Their motivation and efforts are truly praiseworthy as they worked passionately to accomplish this challenging task.

PBS has done a commendable job by conducting the huge exercise in a transparent way, which has led to approval of this Census in CCI by Consensus. Thus, this Census has helped in strengthening the Federation. This Census gets us the population count and status of access the basics. Now it is up to relevant stakeholders to use this information for inclusive development of population by using this granular data. I urge upon PBS to continue working with Federal and Provincial stakeholders for informing public policy and programs for inclusive development.

Lastly, I am grateful to the officers and staff of the Ministry of Planning, Development and Special Initiatives for their exceptional cooperation with the PBS staff. Together, they worked tirelessly to efficiently finalize the results of Census-2023 in a remarkably short period of time, thus enabling us to reach this significant milestone.

Preface



Dr. Naeem uz Zafar
Chief Statistician
ستارہ امتیاز

Population and Housing Census is a crucial national undertaking which serves as a comprehensive data collection exercise to gather information on various aspects of the population and housing conditions. It provides essential demographic information such as population size, age distribution, gender ratio, and other demographic indicators, as well as data on various socioeconomic factors such as education, employment, disability/ functional limitation, and household amenities. This information is crucial for policymakers to formulate development plans and policies that address the specific needs of different segments of the population. The census data is also used for electoral representation. It is a major source for resource allocation, both at the national and local levels, and helps in determining distribution of funds for development projects, social welfare programs, and infrastructure development based on the population's needs.

PBS was asked to do very complex huge task of digital census in early 2022 in very challenging

timelines. At the outset the journey was unvarying and milestone looked unachievable but thanks to already embarked upon journey of digital transformation for data collection and dissemination. PBS conceived, designed, planned, processed, tested and implemented the system to do census in a transparent and inclusive way, thus paving the way for acceptance of results. Successful achievement of these milestones have significantly boosted management and technical capabilities of PBS officials both at headquarter and in field offices.

I would like to thank and congratulate Mr. Muhammad Sarwar Gondal, Member (Support Services/RM) (Project Lead Digital Census), Mr. Ayazuddin, Member (Census & Surveys), Ms. Rabia Awan, Deputy Director General (Census Planning and Coordination/ CPMU) and their whole team for their tireless dedication and efforts for successful completion of the census operation under challenging circumstances. I would also like to render my thanks to the provincial and district administrations for their active participation in providing administrative and human support; the agencies, NADRA, NTC and SUPARCO for timely arrangements of all the necessary hardware and software, and other stakeholders for their active and valuable support. I also thanks to Armed Forces for their untiring efforts without which success of this task was not possible. And finally, I would also like to thank the enumerators without dedicated field work this would not have been possible, for which I express my deep appreciation and admiration.

Digital Census - A Success Story



Muhammad Sarwar Gondal
Member (Support Services/ RM)
Project Lead Digital Census
ستارہ امتیاز

In 49th meeting of the Council of Common Interests (CCI), held on January 13, 2022, where conduct of the 7th Population & Housing Census in a digital format was approved. The CCI also approved the Census Work Plan, Census Questionnaire, and Census Monitoring Committee (CMC) in the meeting along with the recommendation of Census Advisory Committee (CAC).

PBS accordingly started work for 7th Population and Housing Census by digitizing the whole census process starting from HR and Task Assignment Web Portal Inventory Management, Communication Application, Complaint Management System, CATI Support Module and provision of Dashboards at provincial and census district level for monitoring and complete coverage. For census data collection, tablet devices equipped with various software applications, including house/structure listing and household enumeration software, were utilized. Many of the Modules envisioned for the Digital Census were thoroughly checked and their performance and output were verified during the pilot census conducted in 33 administrative districts across Pakistan during 20th July, 2022 to

3rd August, 2022.

The main aim of the pilot census was testing of validity and suitability of the entire census plan and its organization.

Despite many impediments and challenging timelines, PBS completed main census related activities on time including training of 300 Master Trainers at Islamabad, training of 3460 Trainers at Divisional level and training of 120,000 Enumerators at Census District level on both subject matter and IT related aspects of the Digital Census. Similarly, PBS and its stakeholders achieved major milestones, including, digitally updating of census blocks; acquisition of 126,000 tablets and their hardening; development of ERP system and acquisition of latest imagery of Pakistan prior to start of the main census field operation. The Digital Census also implemented a distinctive feature of self-enumeration through a web portal, thus enabling 2.6 million households to conveniently submit their census related information online.

The Digital Census project has proven to be a sounding success, and I would like to extend my heartfelt appreciation and congratulations to Mr. Ayazuddin, Member (Census & Surveys), Dr. Amjad Javaid Sandhu, Director General Administration, Ms. Rabia Awan, Deputy Director General (Census Project Management Unit/Census Planning and Coordination) and the whole team of Support Services, GIS, Field Services/Operations and the Subject matter for their untiring efforts and dedication throughout the entire census operations. Their devotion and commitment were truly commendable, especially considering the challenging circumstances.



Core Team of Pakistan Bureau of Statistics

Dr. Naeem uz Zafar, Chief Statistician/Chief Census Commissioner

Names	Designation	Area of Work
Mr. Muhammad Sarwar Gondal	Member (Support Services / Resource Management)	Team lead/Focal person for Digital Census
Mr. Ayazuddin	Member (Census & Surveys)	Coordination/ PES and finalization of preliminary results
Dr. Amjad Javed Sandhu	Director General Administration	Coordination/Admin & Logistics Support
Ms. Rabia Awan	DDG(CPMU/CP&C)	Procurement, Coordination, Reporting, documentation, Analysis & Report writing

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Section Incharge: Ms. Rabia Awan DDG (CPMU/CP&C)

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Mr. Saqib Sultan Khawar	Statistical Officer
Ms. Sana Habib Chaudhry	Statistical Officer
Ms. Hina Kanwal	Statistical Officer
Mr. Javed Ahmed	Assistant Census Commissioner
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ACRONYMS

ASC	Annual School Census
AJK	Azad Jammu and Kashmir
BHU	Basic Health
CPR	Contraceptive Prevalence Rate (CPR)
CCI	Council of Common Interests
DHQ	District Head Quarters
FP&PHC	Family Planning and Primary Health Care
FATA	Federally Administered Tribal Areas
GDP	Gross Domestic Product
ICR	Intelligent Character Recognizer
ICT	Islamabad Capital Territory
LHW	Lady Health Worker
LFO	Legal Framework Order
MCH	Mother and Child Health (Center)
NADRA	National Database and Registration Authority
NLC	National Logistics Cell
PBS	Pakistan Bureau of Statistics
PCO	Population Census Organization
RHC	Rural Health Center
THQ	Taluka/Tehsil Head Quarter
UNFPA	United Nations Population Fund
AP	Airport
T.B	Tuberculosis
MCHC	Mother Care Health Centre



EXECUTIVE SUMMARY

In its 45th meeting on 12th April, 2021, the Council of Common Interests (CCI) approved the final results of the 6th Population and Housing Census-2017 and decided to initiate the next census as early as possible using the latest technology. In pursuance of the decision, the Government of Pakistan formed a Census Advisory Committee comprising of renowned demographers and experts to recommend a framework for the 7th Population and Housing Census. The committee recommended conducting the census digitally with real-time monitoring for transparency, which, along with the census work plan, census questionnaire, and Census Monitoring Committee, was approved by the CCI in its 49th meeting held on 13th January, 2022.

In the light of the recommendations of Census Advisory Committee, PBS initiated a consultative process with provinces and regions and organized sensitization workshops for stakeholders and government functionaries, including Divisional Commissioners and Deputy Commissioners, to plan and prepare for the digital execution of the 7th Population and Housing Census.

To ensure smooth execution, Census Support Centers were set up at the district level, equipped with necessary IT infrastructure. A technical committee finalized the census questionnaire, incorporating new elements on economic activity, demographics, and disability. Training was conducted in three tiers, ensuring enumerators were well trained and thoroughly prepared. Given the technological advancements and associated risks, PBS conducted a pilot census from 20th July to 3rd August, 2022, across 33 districts to test methodologies, logistics, and security arrangements. The pilot revealed issues such as weather disruptions, delays in tablet distribution, and mapping errors, leading to adjustments before the main census rollout.

Following deliberations on enumeration methodologies, the Census Advisory Committee recommended the dejure method of enumeration for the 7th Population and Housing Census, counting individuals based on their usual residence, with some adjustments for temporary absences and the homeless population. This decision considered the practical realities on the ground, the effectiveness of the dejure method, and the significant financial and human resource requirements of the defacto method.

The data collection process for the 7th Population and Housing Census began with the launch of a web portal for self-enumeration on 20th February 2023. By its closure on 10th March 2023, approximately 2.6 million individuals had submitted their data through the portal. For the main census field operation, house and structure listing was carried out from 1st to 10th March 2023, followed by field enumeration starting on 12th March 2023, with an initial completion date of 4th April 2023. However, at the request of provincial governments to ensure complete enumeration, the Census Monitoring Committee extended the census field operation multiple times, ultimately concluding on 30th April 2023. In some districts, the field operation continued until 21st May 2023 due to under-enumeration.

In order to ensure security of the census field staff, enumerators were accompanied by provincial police, while the Civil Armed Forces and Pakistan Army provided additional support as second- and third-tier responders. To assess accuracy and coverage of the census, Post Enumeration Survey was conducted

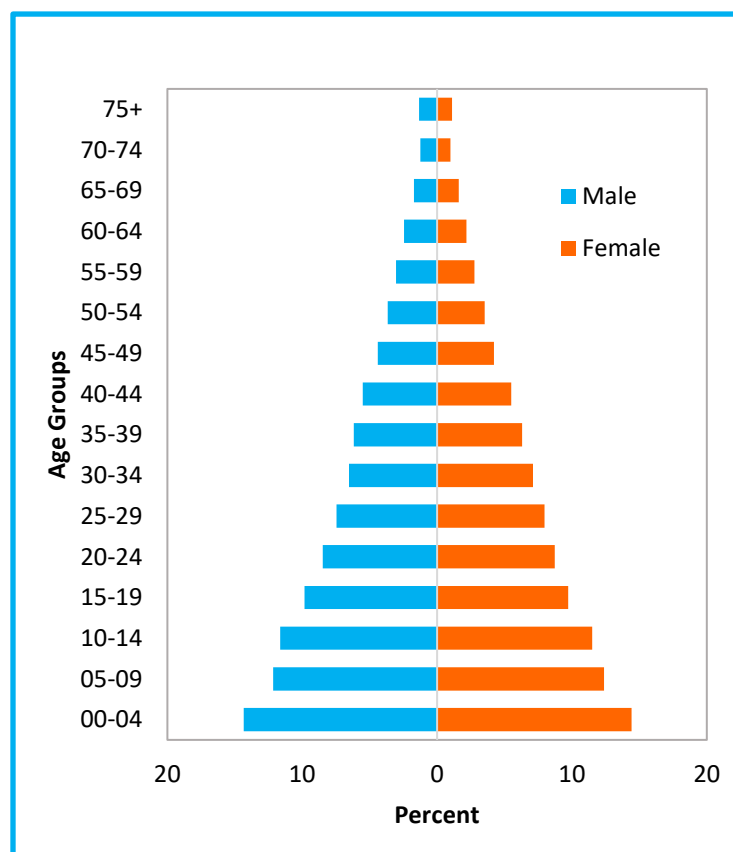


from 8th – 19th July, 2023, following the decisions made in the 49th meeting of the CCI and the 15th-16th meetings of the Census Monitoring Committee.

Census Results

According to the Census-2023 results, population of Punjab is recorded as 127.6 million increasing from 110 million as reported in the previous Census-2017, indicating an average annual population growth rate of 2.53% during the intercensal period of 2017-2023. The total population living in urban areas is 51.97 million with a share of 40.71% and 75.71 million in rural areas with a share of 59.29%. The male population constitutes 51.26% of the total population, whereas female population constitutes 48.73%, and transgender population barely makes up 0.01% of the total population

The total number of housing units according to Census-2023 results are 19.84 million, compared to 17 million recorded in the previous census held in 2017. The average household size has increased from 6.38 persons in Census-2017 to 6.44 persons in Census-2023.



The Division-wise distribution of population shows that Lahore has the highest proportion i.e. 17.83%, followed by Gujranwala 14.71%, Faisalabad 12.71%, Multan 11.03%, Bahawalpur 10.49%, D. G. Khan 10.10%, Rawalpindi 8.93%, Sahiwal 8.68% and Sargodha having 7.51% of the total population.

Total population data by age and sex reveals that 38.21% of the population is under 15 years and 18.39% of the population is between 15-24 years, indicating a young population with high dependency ratio. Other socio-demographic indicators such as population density, sex ratio, literacy and educational attainment, marital status and disability indicate some variations from the previous census which are presented in detail in Part-III of this report.

STRUCTURE OF PROVINCIAL CENSUS REPORT (PCR)

The Census Report on Punjab Province consists of six parts.

Part I is History and methodology of Census 2023

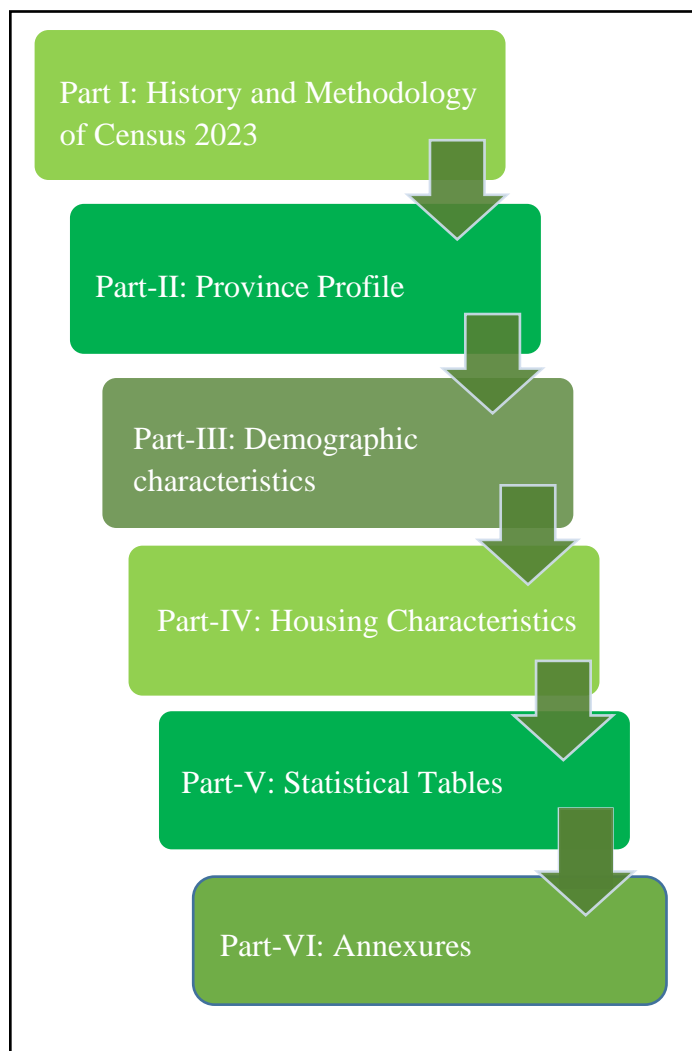
Part II is the profile of Punjab Province covering facts about its physical features and topography, water resources, climate, flora and fauna, history, administration, culture, economy, agriculture, transport and communication, along with health and education.

Part III of the report presents the broad analysis of demographic characteristics of population including information on indicators such as population growth, population density, sex ratio, age structure, marital status, nationality literacy ratio, out of school children (5-16 years) educational attainment, disability, employment and migration

Part IV provides an analysis of Housing Characteristics pertaining to information about housing units, persons per room, nature of tenure, period of construction and construction material used for construction in walls and roofs, source of drinking water, source of lighting and source of fuel used for cooking in the house.

Part V contains 30 statistical tables, out of which 19 tables relate to population data while 6 tables pertain to housing data and 5 pertains to listing information.

Part VI has annexures including Census Forms and maps of Punjab Province. Concepts and definitions are also given to facilitate the reader's understanding.



Structure of PCR



POPULATION AND HOUSING CENSUS-2023 AT A GLANCE

S. No.	Key Indicators	Population and Housing Census 2017	Population and Housing Census 2023
1	Population		
	Punjab	109,989,655	127,688,922
	Male	55,909,774	65,448,376
	Female	54,067,446	62,226,589
	Transgender	12,435	13,957
2	Rural		
	Total	69,442,450	75,712,955
	Male	35,088,081	38,625,841
	Female	34,348,752	37,083,868
	Transgender	5,617	3,248
3	Urban		
	Total	40,547,205	51,975,967
	Male	20,821,693	26,822,535
	Female	19,718,694	25,142,721
	Transgender	6,818	10,711
4	Population of Divisions		
	Bahawalpur division	11,452,594	13,400,009
	Dera Ghazi khan division	11,021,214	12,892,465
	Faisalabad division	14,185,231	16,228,526
	Gujranwala division	16,120,861	18,778,868
	Lahore division	19,389,856	22,772,710
	Multan division	12,268,173	14,085,102
	Rawalpindi division	10,006,624	11,406,496
	Sahiwal division	7,378,065	8,533,471
	Sargodha Division	8,167,037	9,591,275
5	Average Annual Growth Rate	2.13	2.53
6	Population Density	535.6	621.83
7	Sex Ratio	103.41	105.18
8	Population by Religion (%)		
	Muslim	97.78	97.75
	Christian	1.87	1.93
	Hindu	0.18	0.18
	Qadiani/Ahmadi	0.14	0.11
	Scheduled Castes	0.01	0.02
	Others	0.01	0.02
9	Marital Status (%) (15 years and above)		
	Never Married	30.46	29.99
	Married	63.41	65.10
	Widowed	5.25	4.25
	Divorced	0.58	0.47
	Separation	-	0.18
10	Mother Tongue		
	Urdu	4.87	7.18



S. No.	Key Indicators	Population and Housing Census 2017	Population and Housing Census 2023
	Punjabi	69.67	67.00
	Punjabi	0.15	0.28
	Pushto	1.98	1.87
	Balochi	0.83	0.84
	Kashmiri	0.17	0.12
	Saraiki	20.68	20.64
	Hindko	0.59	0.61
	Mewati	-	0.81
	Others	1.06	0.65
11	Nationality		
	Total	109,989,655	127,333,305
	Pakistani	109,768,552	126,959,469
	Non Pakistani	221,103	373,836
12	literacy 10 years & above (%)		
	Total	64.01	66.25
	Male	71.17	71.98
	Female	56.67	60.19
	Transgender	41.70	41.30
13	Out of School (5-16) Years (%)		
	Total	-	26.98
	Male	-	26.17
	Female	-	27.84
	Transgender	-	81.63
14	Disability (%)		
	Total	0.47	3.52
	Male	0.57	3.81
	Female	0.36	3.22
15	Employment		
	Total	-	37,788,384
	Rural	-	22,894,267
	Urban	-	14,894,117
16	Migration		
	Total	-	5,883,556
	Rural	-	2,159,223
	Urban	-	3,724,333
17	Households		
	Total	16,999,685	9,862,870
	Rural	10,632,689	4,718,683
	Urban	6,366,996	5,144,187
18	Households Size		
	Total	6.38	6.44
	Rural	6.46	6.46
	Urban	6.26	6.39
19	Source of Drinking Water (%)		



S. No.	Key Indicators	Population and Housing Census 2017	Population and Housing Census 2023
	Inside	89.60	71.23
	Outside	10.40	28.77
20	Source of Lighting (%)		
	Electricity	93.45	94.95
	Solar Panel	-	1.69
	Kerosene Oil	2.55	0.64
	Gas Lamp	0.07	0.01
	Generator	-	0.02
	BioGas	-	0.02
	Others	3.42	2.68
21	Fuel Used for Cooking (%)		
	Wood	57.85	49.94
	Sui Gas	37.92	39.43
	LPG/LNG (Cylinder)	-	5.40
	Kerosene Oil	0.11	0.04
	Electricity	-	0.08
	Bio Gas	-	0.08
	Dung Cake	-	4.34
	Others	4.12	0.68
23	Availability of Kitchen, Bathroom and Latrine Facility (%)		
	Kitchen		
	Separate	51.83	62.76
	Shared	14.58	10.74
	None	33.59	26.50
24	Bathroom		
	Separate	63.28	71.73
	Shared	20.31	14.70
	None	16.41	13.57
25	Latrine/Toilet		
	Separate	86.50	74.81
	Shared	-	15.69
	None	13.50	9.50

Note: *These religions were included in the Census Form as separate options for the first time in Census-2023

**Negligible percentages have not been included.

HISTORY AND METHODOLOGY OF CENSUS

1.1 Background

Pakistan Bureau of Statistics (PBS), in accordance with the General Statistics (Reorganization) Act 2011, is responsible for conducting population and housing censuses in the country. Alongside its other data collection activities, PBS conducted censuses in the years 1951, 1961, 1972, 1981, and 1998. Following the 1998 census, the 6th Population and Housing Census, which was originally scheduled for the year 2008, was delayed and eventually conducted from March to May in 2017. The provisional summary results of Census-2017 were released after the requisite approval from the Council of Common Interests (CCI) in its meeting held on August 25, 2017. These results were made available to government officials, academia, researchers, and the general public through press releases and the PBS website.

There were reservations on Census-2017 results for Punjab. As a result, census which was completed in 2017 got approved by the CCI in its 45th meeting held on 12th April, 2021. The CCI also directed PBS to start the process of the next census as early as possible according to the international best practices by using latest technology.

In compliance to the CCI decision, PBS initiated preparatory work to conduct the 7th Population and Housing Census in Pakistan. To achieve this end, the Government of Pakistan established Census Advisory Committee consisting of distinguished demographers and experts with the aim of formulating recommendations to implement the latest technology and adopt international best practices, as well as to devise strategy to build confidence among all the stakeholders, guarantee smooth completion of census operation and improve credibility and reliability of the census results. The Committee conducted several meetings and after detailed deliberations finalized the recommendations to carry out the census “digitally” with real-time monitoring for transparency and broader acceptability.

Figure 1.1 : Glimpses from the Meetings of Census Advisory Committee





The main recommendations of Census Advisory Committee are given as under.

- Census must be conducted Digitally with real-time online monitoring & geo-tagging of all structures
- Ensure Universality: Counting of whole population residing in country at the time of the census irrespective of its Status/ Holder of CNIC or not.
- De-jure Method of enumeration is recommended (person is enumerated at usual place of residence). This method is the widely used method internationally and used in all previous Censuses in Pakistan.
- Single Census questionnaire may be administered which should be strictly in relevance to the Objectives of Census.
- Law enforcement agencies may be used for security but not for enumeration / verification.
- Field Data collection / Monitoring may be carried out by Provincial Government staff. Comprehensive trainings and involvement of graduate students in the enumeration process is recommended.
- Involvement of Stakeholders (especially provinces / political parties) from start to end (Planning to Finalization of results)
- Establishment of National Census Coordination Center (N3C) with representation of Provincial Governments for effective monitoring, coordination and policy decisions.
- Effective publicity campaign with effective use of social media for clarity regarding the primary objective of Census which may begin early and extend right up to the release of the first initial results
- Conduct of Pilot Census for checking the whole process and conduct of Post Enumeration Survey for assessing reliability of data and coverage

The Federal Cabinet in its meeting held on 5th October, 2021 approved the recommendations of the Census Advisory Committee for forwarding to the CCI. The CCI in its 49th meeting held on 13th January, 2022 approved the recommendations of Census Advisory Committee for the conduct of 7th Population and Housing Census, along with census work plan with timelines, census questionnaire, Census Monitoring Committee (CMC) and its TORs. The CMC was constituted with representation of all Chief Secretaries, relevant Provincial Secretaries (Education, Health, Local Government etc.), Senior Members of Board of Revenue, Secretary IPC, DG Military Operation and others for prompt decision making and coordinated efforts for the successful conduct of the census.

1.2 Requirements of Digital Census

Technological developments and subsequent access to modern technology has largely eased the way in which the business of a population census is undertaken. Modern technology permits end-to-end embedding of processes in the census value chain. This possibility ranges from planning, monitoring and



implementation to evaluating outcomes. Many facets of census activities can benefit from the use of technology.¹

However, it is of utmost importance to comprehend the significance of technology and carefully choose the most appropriate option. Introducing technology can be an expensive and risky endeavor if not aligned with the unique circumstances of the country. Hence, in order to guarantee successful implementation of electronic data collection technology in the census process, it was imperative to precisely identify all the essential requirements and formulate comprehensive plans for integrating this technology at an early stage of the census life cycle. Figure 1.2 gives a schematic representation of the hardware and IT-related requirements envisaged for DigitalCensus-2023.

Figure 1.2: Hardware and IT Related Requirements of Digital Census



The 7th Population and Housing Census marked a significant milestone in Pakistan as it became the first-ever digital census in the country. The implementation of this census posed unique challenges that required careful planning and preparation from the very beginning. These challenges included development of step-by-step procedures for the entire process, creation of high-resolution digital maps, acquisition of tablet devices, development of specialized census software to perform various tasks such as structure listing, enumeration, real-time monitoring, and field coordination, as well as establishment of data infrastructure and storage facilities. Additionally, extensive efforts were made to ensure transparency and reliability of the census by addressing key processes, some of which will be discussed in the subsequent sections. It is important to highlight that the recommendations of the Census Advisory Committee for the Digital Census were thoroughly taken into account during both the planning and execution stages of these processes.

¹ “Principles and Recommendations for Population and Housing Censuses” (Revision 3), Department of Economic and Social Affairs, Statistics Division, United Nations, New York, 2017. (Emphasis added)

1.2.1 Consultative and Sensitization Process

One of the main recommendations of Census Advisory Committee approved by the CCI in its 49th meeting was involvement of stakeholders through the entire census process. To accomplish this objective, PBS conducted various rounds of engagement sessions with provincial administrations, civil society organizations, and academia. In this regard, five meetings were conducted with provinces from 6th September, 2021 to 16th September, 2021, whereas six sensitization workshops were held at provincial capitals from 24th December, 2021 to 10th January, 2022. Additionally, another round of sensitization process was commenced on 23rd May, 2022, with workshops conducted by the PBS team at all the provincial and regional headquarters.

The purpose of these sessions was to inform about the transparent data collection of census digitally and role and responsibilities of all federal and provincial stakeholders. Additionally, stakeholders were made aware of their access to GIS-enabled monitoring, which facilitated tracking progress of the census. It is worth noting here that the representatives of the provincial governments remained actively engaged from the planning phase of the census until its completion in the field.

Figure 1.3: Glimpses from Workshops Held at Provincial Capitals





1.2.2 Role of Consulting Agencies

After approval of the recommendations of Census Advisory Committee and work plan of 18 months to conduct 7th Population and Housing Census-2023 by the CCI in its 49th meeting, PBS, keeping in view the challenging timelines, engaged for the Government to Government (G2G) solution National Database and Registration Authority (NADRA), Space and Upper Atmosphere Research Commission (SUPARCO) and National Telecom Corporation (NTC) for provision of software, hardware, latest high resolution imagery and allied services required for successful completion of the digital census field operation.

The following Table 1.1 summarizes the role of consulting agencies, NADRA, SUPARCO and NTC regarding provision of hardware and software during the conduct of 7th Population and Housing Census-2023.

Table 1.1 : Role of Consulting Agencies during the Digital Census-2023

Task	Description	Responsibility
Tablet device and allied accessories	Provision of 126000 tablet devices and allied accessories Provision of 126000 secure data SIMs Hardening and preparation of tablet devices Dispatching and retrieval of tablet device	NADRA
Datacenter and Infrastructure	Compute storage and network resources Two sites, one primary site at NTC Islamabad and one disaster recovery site at NTC Lahore Intranet and internet connectivity of sites Software licenses required for the datacenter	NTC
Census Support Centers	IT support to field staff Provision of internet devices	NADRA NTC
Call center	Establishment of call center at PBS HQ Operationalization of call center for 6 months Technology transfer to PBS	NTC
Census Software	Provision of complete turnkey solution Hosting of census software solutions at infrastructure provided by NTC Syncing of data and data security	NADRA
GIS imagery	Provision of GIS imagery	SUPARCO



1.2.3 Census Software

For the Digital Census-2023, initially eighteen software modules were considered to facilitate various tasks in a digital format. However, upon careful internal discussions and considerations, it was determined that some of these modules shared similar features. As a result, the Supervisor Dashboard and Data Synchronization modules were combined with the Indicator and Trend Analysis and Android House Listing and Enumeration Data Collection modules, respectively. The final list of modules, comprising sixteen in total, can be seen Table 1.2.

Table 1.2: Software Modules Finalized for Digital Census-2023

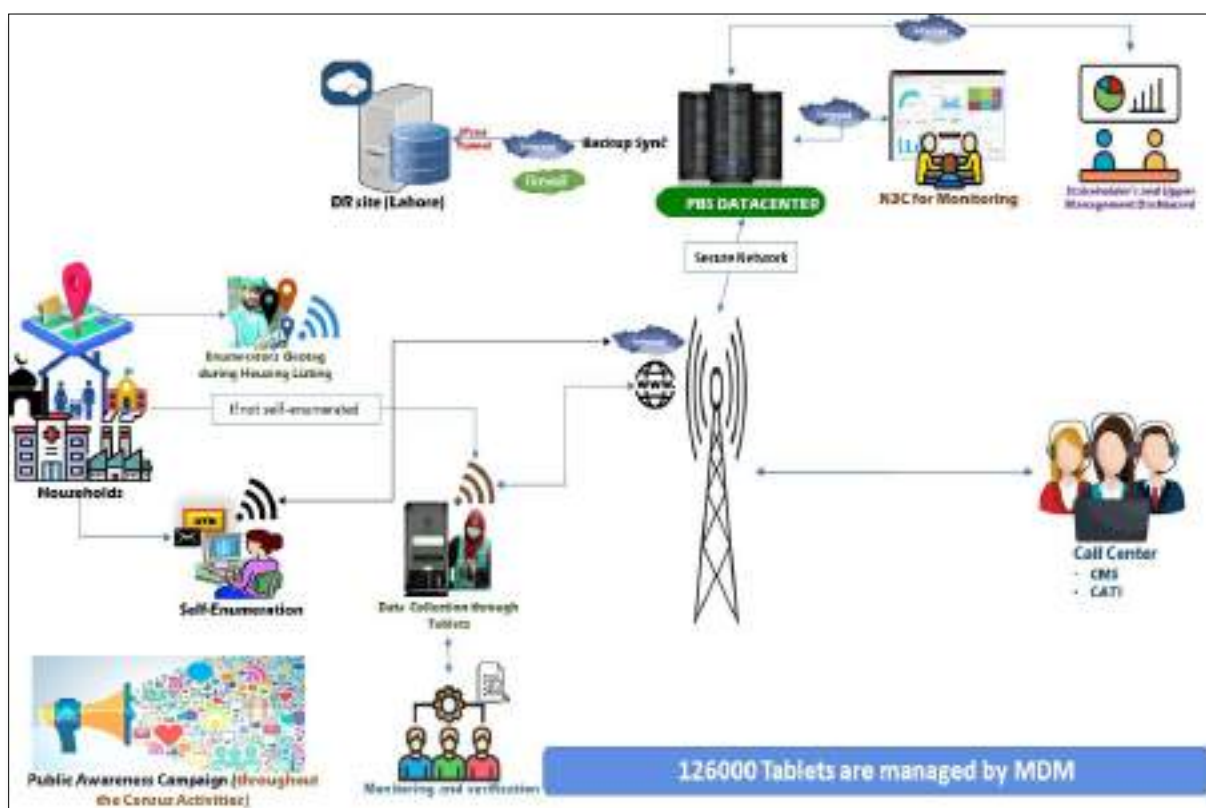
S. No.	Software Modules	S. No.	Software Modules
1	Self-enumeration web portal	9	GIS based Dashboard Monitoring System
2	HR & Task Assignment Web Portal	10	Dashboard for Trend Analysis
3	Training Web portal	11	Data Cleaning Module
4	Inventory Management	12	Complaint Management System
5	Android House listing App	13	Reporting Module
6	Android Enumerator Data Collection app	14	Public Data Dissemination Portal
7	Communication application	15	CATI support module
8	Area Frame Updation Application	16	MDM

1.2.4 Census Hardware and IT Infrastructure

The digital infrastructure, PBS already have, was not reliable enough to support the extensive census operation. As a result, it was necessary to upgrade the entire datacenter to meet the necessary standards for power backups, precision cooling, network and server security, environmental monitoring and control, fire suppression systems, and access control systems. Additionally, a secondary site with disaster recovery capabilities had to be introduced. However, given the tight schedule for the census, procuring and completing the necessary upgrades for the datacenter was not feasible. Therefore, the well-established tier-III Datacenter Infrastructure of National Telecom Corporation (NTC) suitable for this exercise was utilized to provide round-the-clock support, with multiple active sites including a dedicated disaster recovery site.

The hardware and IT related requirements chalked out for the Digital Census-2023 included 126000 tablet devices with allied accessories, hardening and preparation of tablet devices, internet SIMs from Telco's, compute storage and network resources, two sites one primary site and one disaster recovery site, intranet and internet connectivity of sites, data security, IT support to field staff from Census Support Centers, and establishment of call centers. PBS accordingly engaged National Database and Registration Authority (NADRA) for provision of 126000 tablets with allied accessories (secured, hardened devices), Census Software Solution (Enterprise Resource Planning - ERP), Data SIMs and secure data connectivity, and census field support services.

Figure 1.4 :The Digital Architecture used in Census-2023





1.2.5 Acquisition of High Resolution Imagery

Digital maps of area frame are at the crux of digital enumeration. PBS had already digitized its area frame, which consisted of approximately 182,000 blocks and conducting surveys through tablets using the digitized block boundaries. However, due to the sensitivity and magnitude of the census project, PBS decided to acquire the latest satellite imagery accurate to a level that does not affect the accuracy of geo-tagging of structures. For this purpose, PBS held several meetings with SUPARCO, the National Space Agency of Pakistan specializing in GIS and Space Science research, to discuss and determine the imagery and GIS requirements. After extensive discussions between the technical experts from both sides, the following services were decided to be acquired from the SUPARCO.

- High resolution digital satellite imagery of 0.3-meter resolution for 18 districts and 0.98-meter resolution for remaining areas for reconciliation and ground reference (not more than 6 months old).
- Support in terms of infrastructure and human development for hosting of Digital Enumeration Area Maps on PBS server.

1.2.6 Provision of Call Center Services

A call center by the NTC was established at the PBS headquarters to facilitate smooth communication between the public and the Census administration during and after the census exercise. This call center served as a central hub of information, handling not only general complaints but also inquiries from the public regarding the census process, on-field activities, and frequently asked questions about the census. Additionally, it was utilized for Computer-Assisted Telephone Interviewing (CATI) approach after the census field operation.

A call center was set up by the NTC within the premises of PBS headquarter to serve as an information hub for a seamless interface between Public and Census administration, during and after the census exercise. It was used not only for general complaint resolution, but also for enquiries generated by the public for PBS about the census process, on-field activities and other census frequently asked questions. It was also used for Computer-assisted telephone interviewing (CATI) approach after the census field operation.

1.2.7 Deployment of Census Field Staff

As per the previous practices, the field operation of 7th Population and Housing Census was conducted and supervised through the respective provincial government's machinery. The Provincial Chief Secretaries being the administrative heads of the provinces implemented the census plan prepared by the Federal Government, and all the orders and instructions in this respect were issued from their offices down to the level of Divisional Commissioners, Deputy Commissioners and Assistant Commissioners.

Similarly, from administrative and organizational point of view, Census Districts were established all over the country, including Gilgit-Baltistan and Azad Jammu & Kashmir, for effective coordination and implementation of Digital Census activities. In Punjab, Punjab and Khyber Pakhtunkhwa, tehsils were declared as Census Districts, whereas in the rest of the country including



Gilgit-Baltistan and Azad Jammu & Kashmir, Admn. districts were declared as Census Districts. The respective administrative heads of the admn. districts and tehsils were notified as Census District Officers (CDOs). These Census Districts were divided into Census Charges, Census Circles, and Census Blocks.

PBS ensured effective coordination with provincial and regional administration by deploying its own staff members, including Statistical and Geographical assistants, to work alongside Census District Officers at 495 Census Districts. These staff members acted as a crucial link between PBS administrations, provincial and regional administration, and local field staff. They facilitated timely and efficient communication regarding census instructions, complaints and suggestions, as well as logistic support.

1.2.8 Establishment of Census Support Centers

Since the Digital Census was being carried out first time in the country, therefore, to keep the process smooth and ensure availability of system alive 24/7, dedicated Census Support Centers on the recommendation of Census Advisory Committee were established at the Tehsil/Census District level. These centers played a vital role in facilitating the census field operation. They were responsible for a range of tasks, including the distribution and collection of tablet devices, as well as installation and configuration of census applications. Moreover, they performed as Control Room and Complaint Inquiry Office in each Census District. These centers were equipped with all the necessary IT equipment, furniture, fixtures, and technical staff. The technical staff, mostly from PBS, were assigned to provide support to the technical field staff, enumerators, and supervisors.

1.2.9 Training of Census Staff

In order to provide comprehensive training both on the subject matter and IT related aspects of the Digital Census to the census field staff, supervisors and enumerators, a three-tiered plan was devised. The first tier involved training Master Trainers in Islamabad; the second tier consisted of training Trainers at the Divisional level; and finally, the third tier involved training supervisors and enumerators at the Tehsil level. The training for 328 Master Trainers took place at NIBAF in 5 batches during 5th - 15th December, 2022. These Master Trainers then imparted training to 3460 Trainers in 94 batches during 18th - 23rd December, 2022. Subsequently, the Trainers trained a total of 121,000 census field staff in 2000 batches during 7th - 20th January, 2023. To provide a glimpse of the master training sessions, a selection of photos is shown in Figure 1.5.



Figure 1.5 : Training of Master Trainers for the Digital Census Field Activities



1.3 Pilot Census of Digital Census-2023

Pilot census serves as a thorough assessment of all the census procedures. Its primary objective is to evaluate effectiveness and suitability of the complete census plan and its organizational framework by conducting a trial run. This entails ensuring comprehensive coverage of both geographic areas and population segments. More specifically, pilot census aims to test the accuracy of cartography, methodology, data collection methods, questionnaires, logistical planning, as well as the interaction and coordination among all the resources involved in the census.



The pilot census of Digital Census-2023 encompassed twelve specific objectives aimed at rigorously testing the following aspects.

- i. Effectiveness and comprehensibility of training materials and procedures to impart trainings to the master trainers and enumerators.
- ii. Capabilities of enumerators to comprehend the census concepts within a short span of time and implement in the field with maximum efficiency and accuracy.
- iii. Applicability and suitability of census questionnaire, clarity of its wording, sequence of questions, and response biases.
- iv. The enumeration workload and time required to carry out the enumeration.
- v. Suitability of coordination mechanism for logistic support in the field and necessary communication to and from PBS representatives in the field and other field staff such as enumerators/ supervisors etc. to devise effective strategy to deal with day to day issues.
- vi. Census tablets and other hardware for their suitability in the field, especially durability of tablet battery and charge banks to keep tablets alive during the whole enumeration time of a day.
- vii. Census software and GIS for their reliability, accuracy, efficiency and security.
- viii. Digital block maps with high-resolution imagery and capability to properly identify to the enumerators their assigned blocks and to help recognize block overlapping/ non-coverage etc.
- ix. Compatibility between the hardware and different census software and to sort out issues prior to start of full scale census enumeration.
- x. Network availability and proper and easy log-in capability of the devices.
- xi. Proper, effective and secure data synchronization and transmission to the central database.
- xii. Real-time monitoring in the field and at PBS headquarter to deal with block identification/ overlapping, non-coverage and other issues requiring regular and immediate action from the concerned in the field and at PBS headquarter.

In light of the objectives of the pilot census, which was to thoroughly test all the new technologies adopted for the Digital Census, the PBS Technical Committee decided that instead of utilizing a representative sample, the main focus should be on evaluating the entire process of the Digital Census under diverse conditions. In order to accomplish this, a study was conducted on the block-wise information and after detailed deliberation it was decided to select a sample of around 500 blocks from clusters of districts keeping in view factors such as density, accessibility, and topography of the area. Consequently, a total of 417 blocks were selected from 33 administrative districts for the pilot census. The selected administrative districts for Pilot Census can be seen in Figure 1.6, whereas breakdown of the selected blocks, both by province/district and rural-urban areas, is given in Table 1.3 and Figure 1.7, respectively.

Field operation of the pilot census was carried out from July 20, 2022 to August 3, 2022 in 33 selected Administrative Districts across Pakistan, including Azad Jammu & Kashmir and Gilgit Baltistan. For the pilot census field operation, a three-day training session for the Master Trainers was held at the PBS headquarters from July 5 to July 7, 2022. The Master Trainers then imparted training to the enumerators in the field at the selected 27 stations from July 13 to July 17, 2022. The district

administration of each province/district provided the enumeration and supervisory staff. The enumerators were selected from various provincial departments, and the enumeration was conducted under the supervision of the tehsil and district administration in their respective jurisdictions. As the pilot census was digital, tablet devices were used, and two software modules were developed and utilized for this purpose.

Several key issues were identified during the pilot census. Firstly, the tablets used during the process experienced fast battery drainage, resulting in frequent interruptions. The SIM cards provided did not always match the local network, causing connectivity problems. Another challenge was the technical deficiency of the staff deputed at the Census Support Centers in each census district. This hindered smooth execution of the data collection process. Moreover, the enumeration blocks in Balochistan and Khyber Pakhtunkhwa were situated far away from the Census Support Centers, leading to delays and logistic difficulties. Furthermore, there were delays in resolving technical problems that arose during the enumeration. Adverse weather conditions also posed a challenge in conducting the field operation effectively. Lastly, there were compatibility issues between the SUPARCO satellite imagery and PBS maps, which impacted accuracy of the data collection process.

The issues identified during the pilot census were assessed thoroughly and appropriate corrective measures were taken prior to commencement of the main census activities and field operation for the census data collection.

Figure 1.6: Map Showing Admn, Districts Selected for the Pilot Census





Table 1.3: Province/District-wise Blocks Selection for the Pilot Census

Province/ Region	Selected Districts	No. of Blocks	Visual Presentation of No. of Blocks Selected from each District
Islamabad	Islamabad	20	
Punjab	Bahawalnagar	16	
	Rahim Yar Khan	36	
	Jhang	16	
	Multan	20	
	Jhelum	12	
	Rawalpindi	26	
	Khushab	12	
Khyber Pakhtunkhwa	Dera Ismail Khan	24	
	Abbottabad	4	
	Mansehra	4	
	Lower Kohistan	8	
	Upper Kohistan	12	
	Kohistan	8	
	Kohat	4	
	Nowshera	4	
Punjab	Dadu	12	
	Jamshoro	18	
	Karachi Central	16	
	Karachi East	21	
	Tharparkar	14	
	Sanghar	16	
	Sukkur	4	
Balochistan	Kalat	10	
	Mastung	8	
	Khuzdar	14	
	Washuk	4	
	Gwadar	12	
Azad Jammu and Kashmir	Jhelum Valley	8	
	Mirpur	16	
Gilgit-Baltistan	Baltistan	4	
	Gilgit	8	
	Nagar	6	
Total		417	0 10 20 30 40



Figure 1.7: Rural/Urban Breakdown of the Blocks Selected for the Pilot Census



1.4 Enumeration Method and Field Operation

The 6th Population and Housing Census-2017 of Pakistan, similar to earlier censuses, was conducted using a mixed approach, *defecto cum dejure*. The census mainly followed the *dejure* concept, which considers the usual place of residence for counting the population. However, only the "homeless" population was counted using a *defacto* basis. This mixed approach is also commonly used in other countries of the sub-continent.

The Census Advisory Committee after detailed deliberations on the advantages and disadvantages of both *defacto* and *de-jure* methodologies, taking into account the practical realities on the ground, evaluating effectiveness of the *de-jure* method, as well as considering the significant financial and human resource requirements of the *defacto* method, recommended the *de-jure* method of enumeration for the 7th Population and Housing Census-2023. The *de-jure* method of enumeration involves counting individuals based on their usual residence, which was defined as the place where they have continuously lived for at least six months (excluding temporary absences for holidays or work). Additionally, the intention to live in a particular place for at least six months was also considered when determining usual place of residence. Individuals who were temporarily residing in a place were not counted, as they were enumerated at their usual places of residence. Likewise, individuals who were temporarily out of the country or city to attend religious events, weddings, or trainings for less than six months were counted at their usual places of residence.

The data collection process of the Digital Census-2023 began with the deployment of a web portal for self-enumeration on 20th February, 2023. This marked a significant milestone, as only a few countries worldwide have attempted and achieved such an endeavor for their population. Around 2,600,000 individuals submitted their data through the self-enumeration portal till its closing date on 10th March, 2023. The process of listing houses and structures took place between 1st – 10th March, 2023, while the census field enumeration began on 12th March, 2023, with an initial completion date of 4th April, 2023. However, based on the requests from provincial governments for complete enumeration,



the field operation was extended four times by the Census Monitoring Committee until 30th April, 2023. In certain districts, the census field operation was further extended until 21st May, 2023, mainly due to under-enumeration.

1.5 Post Enumeration Survey

One of the main recommendations made by the Census Advisory Committee was to conduct Post Enumeration Survey (PES) of the 7th Population and Housing Census-2023. The recommendation was approved by the CCI during its 49th meeting held on 13th January, 2022. Moreover, during the census field operation, PBS constituted two Committees: *Technical/ Expert Committee on Census-2023* for periodic review with provincial and district stakeholders to ensure credible census field operation and committee on *Trend Analysis of Census Data for 7th Population and Housing Census (Digital Census)* to analyze trends and determine suitability of the census data prior to placing it before the competent forum for approval. The Committee held several meetings and after detailed review of the census data recommended to conduct Post Enumeration Survey to address the issues of over- or under-enumeration identified through demographic techniques in certain areas of the county.

Therefore, during the 15th meeting of the Census Monitoring Committee chaired by the Minister for PD&SI on 7th June, 2023, it was decided that Post Enumeration Survey may be conducted in order to assess accuracy and the coverage extent of the Digital Census-2023. The methodology for conducting the PES and incorporating its findings into the final Digital Census-2023 results was approved in the subsequent 16th meeting of the Census Monitoring Committee held on 27th June, 2023. Accordingly, the Post Enumeration Survey (PES) of Digital Census-2023 was conducted from 8th to 19th July, 2023, in accordance with the decision made in the 49th meeting of CCI and 15th-16th meetings of Census Monitoring Committee.

For the PES, a sample of 2500 Enumeration Blocks was selected from 48 administrative districts (overall level) with relative margin of error (RMOE) of 1.1%. The sample was selected using stratified random sampling where strata within provinces were made on the basis of similar characteristics like growth rates, population etc. Each stratum represented distinct districts. The 48 selected districts represented their respective stratum from which the sample was selected. The sample size was further proportionally allocated to urban and rural part of each district. Provincial and rural/urban breakdown of the PES sample is given in Table 1.4.

Table 1.4: PES Sample Allocation with Provincial and Rural/Urban Breakdown

Province	Rural	Urban	Total
Khyber Pakhtunkhwa	287	93	380
Punjab	471	586	1057
Sindh	313	538	851
Balochistan	124	43	167
Islamabad	23	22	45
Total	1218	1282	2500

The PES enumerators and supervisors who were selected from the Digital Census-2023 staff, were assigned new blocks during the PES field activities in order to ensure independence of the survey. To further ensure that the PES field staff was well-prepared, they underwent a refresher course and were equipped with the training materials, including a comprehensive manual. The manual was designed with the PES objectives in mind and provided clear guidelines on understanding the objectives, methodology, and techniques of the survey.

Figure 1.8 : Training of Enumerators for the PES Field Activities



The PES field operation lasted for a total of 12 days. On the 8th of July 2023, the PES field operation was commenced with clear instructions to the enumerators to conduct listing and enumeration as separate activities. The initial three days of the PES field operation were dedicated to listing, while the remaining nine days were allocated for enumeration. To ensure comprehensive and accurate coverage, SUPARCO maps of the blocks were provided to the enumerators in both electronic form on their Tablets and in hard copy. Enumerators were instructed to assign a unique PES number to each structure within the selected block, regardless of the numbering used in the census. For example, structures were labeled as PES 001, PES 002, and so forth. Each enumerator was required to enumerate only one PES block.



During the PES field activities, it was crucial to ensure safety and trust of the enumerators, as they faced resistance from respondents who were skeptical due to isolated incidents reported in the media. To address this, man-to-man security was provided to the enumerators, not only for their protection but also to encourage better response rates. The main census field operation had previously suffered from non-response and less coverage, largely attributed to the lack of security measures. Recognizing this, it was imperative to prioritize the provision of man-to-man security for the field staff during the PES, in order to achieve more accurate and reliable results.

1.6 Finalization and Approval of Final Results

Census is the 9th subject of the Federal Legislative List Part-II and according to the Article 154 of the Constitution of the Islamic Republic of Pakistan, the Council of Common Interests (CCI) is entrusted with the responsibility of formulating and regulating policies pertaining to matters in Part-II of the Federal Legislative List. Additionally, the CCI is also responsible for exercising supervision and control over the relevant institutions.

Accordingly, the final summary results of the 7th Population and Housing Census-2023 were compiled by factoring in the findings of the Post Enumeration Survey and submitted for the approval of CCI on 2nd August, 2023. In its 50th meeting held on 5th August, 2023, the CCI considered the final summary results and unanimously approved the results of 7th Population and Housing Census-2023, as follows:

“The CCI considered the Summary titled “Results of 7th Population and Housing Census-2023 (The Digital Census)” dated 2nd August, 2023, submitted by Ministry of Planning, Development and Special Initiatives and unanimously approved the results of 7th Population and Housing Census-2023 (The Digital Census), as mentioned in Annex-V of the Summary and reproduced at para-7 above, for publication and for use / information of general public.”

Figure 1.9 Glimpses from 50th Meeting of CCI Held on 5th August, 2023



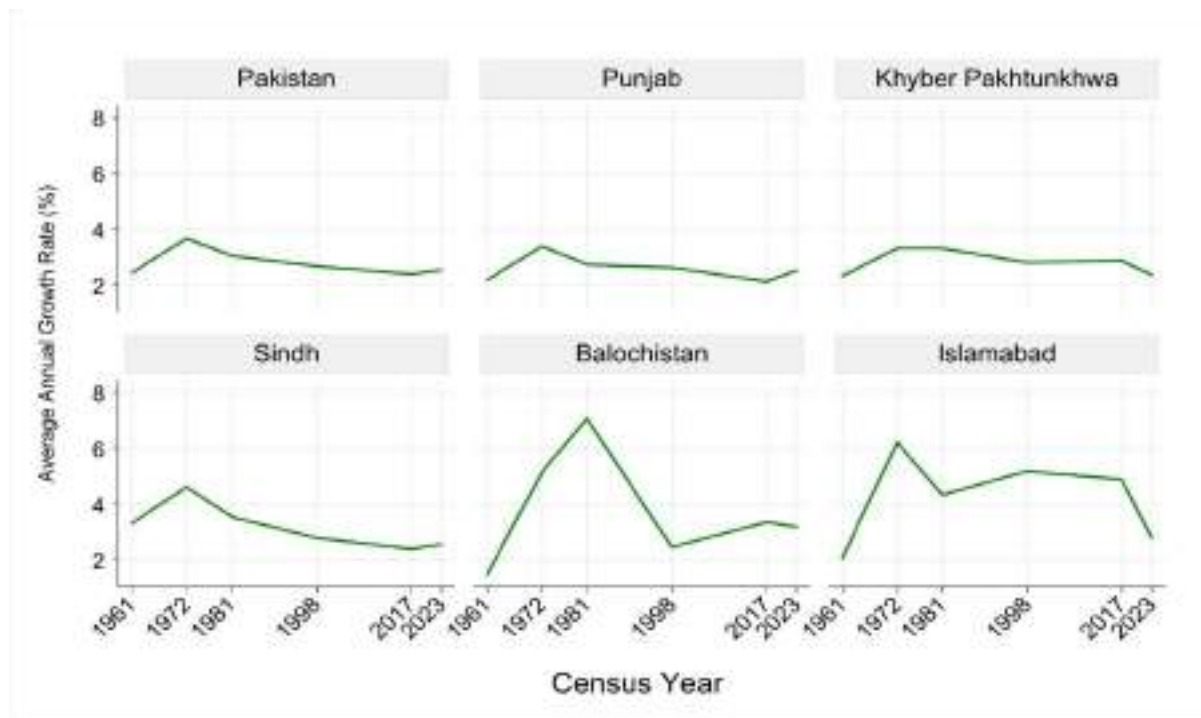


The official announcement for the final results of the Digital Census-2023 was made on 7th August, 2023 through the gazette notification. Table 1.5 below provides a breakdown of the population and average annual growth rates for each province, as well as a comparison of Digital Census-2023 with the previous censuses conducted during 1998 and 2017. Similarly, for a further comparison purpose, Figure 1.10 depicts the average annual growth rates observed for Pakistan, the four provinces and Islamabad Capital Territory (*excluding FATA*) during the last six censuses held in the country.¹

Table 1.5: Population and Annual Growth Rates for Census-1998, 2017 and 2023

Region/ Province	Population (Million Nos.)			Annual Growth Rate (%)		
	1998	2017	2023	1998	2017	2023
Pakistan	132.35	207.68	241.49	2.69	2.40	2.55
Khyber Pakhtunkhwa	20.92	35.50	40.85	2.72	2.82	2.38
Punjab	73.62	109.98	127.68	2.64	2.13	2.53
Sindh	30.44	47.85	55.69	2.80	2.41	2.57
Balochistan	6.57	12.34	14.89	2.47	3.37	3.20
Islamabad	0.81	2.01	2.36	5.19	4.91	2.81

Figure 1.10: Average Annual Growth Rates Observed During the Last Six Censuses



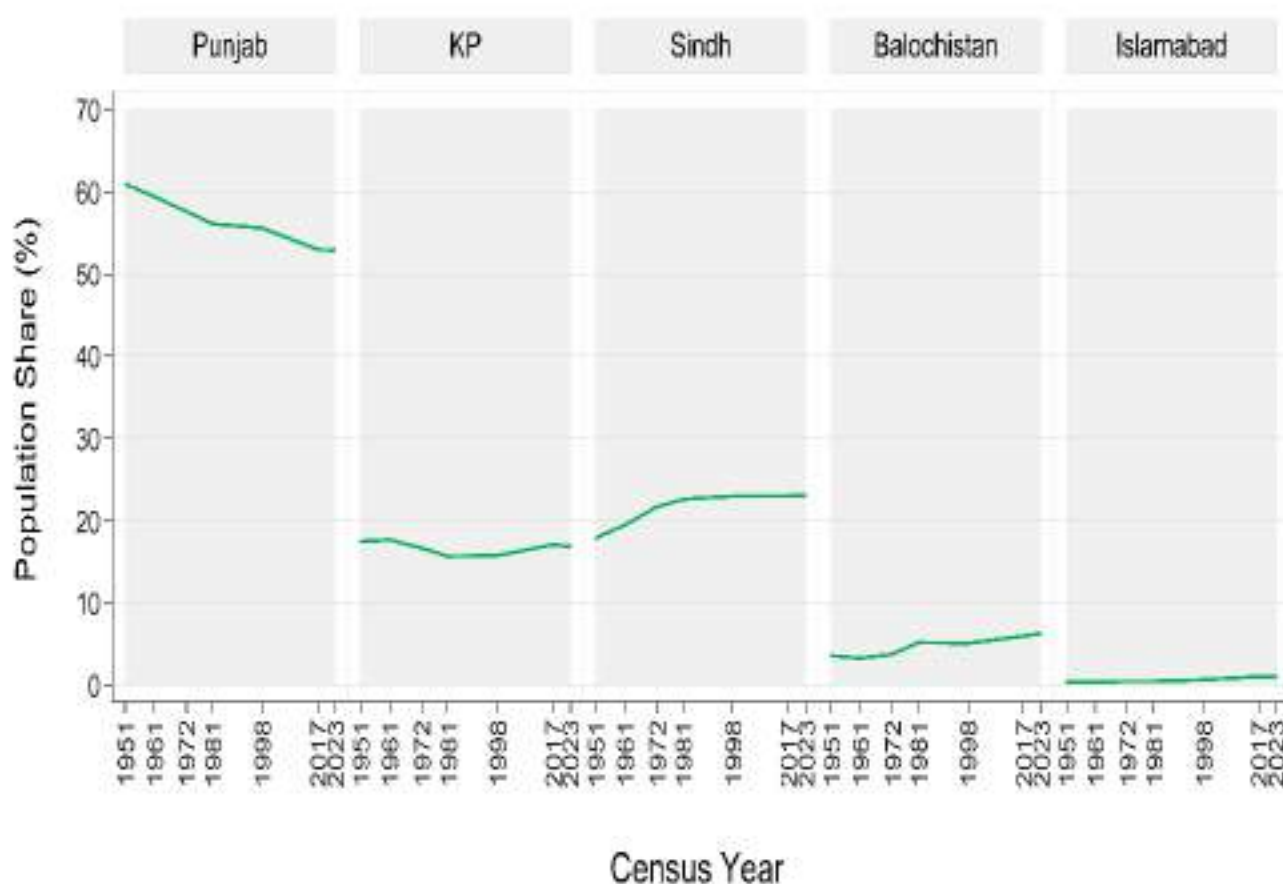
¹ In Pakistan, since the country gained independence in 1947, six population and housing censuses have prior been conducted at various intervals. These censuses took place in 1951, 1961, 1972, 1981, 1998, and 2017.



It is pertinent to mention here that in this census there due to access issues in the sensitive restricted areas and some collective residences only head counts were provided, therefore the detailed tables except gender, urban/ rural will for 240,458,089 as detailed characteristics were not provided for 1,041,342.

Figure 1.11 portrays the population share trends at the provincial level and for Islamabad Capital Territory during all the Population and Housing censuses conducted in the country. It is evident that the share of Punjab has consistently declined over the years. For instance, in the 1951 census, Punjab accounted for 60.9% of the population, but this figure decreased to 52.9% during the Digital Census-2023. The decline in Punjab's share can be attributed towards the historic relatively higher population growth observed in Punjab and Balochistan provinces. During this period, the population share of Punjab increased from 17.9% to 23.1%, while Balochistan's share grew from 3.5% to 6.2%. On the other hand, Islamabad Capital Territory experienced a moderate increase in its share, approximately 0.7% during the same period.

Figure 1.11: Trends observed in Provincial Shares





1.7 Engagement of Media

In regards to communication strategy for 7th Population and Housing Census-2023, the Census Advisory Committee reviewed previous practices in Pakistan, as well as other developed and developing countries. Based on their findings, they recommended initiation of an early and impactful awareness campaign during the census implementation process. This campaign was to be designed to ensure clear communication regarding the importance of the census, comprehensive description of the entire census process, duration of the census field enumeration, and to address any lingering ambiguity, particularly among groups who had not agreed with the previous census results. The ultimate goal was to foster cooperation and seek their participation in the census.

Furthermore, over the past decade or so, the rise of popular social media platforms like Twitter, Facebook, LinkedIn, Instagram, and YouTube has paved the way for a new era of global digital interaction. These platforms have revolutionized the way people connect and communicate, breaking down geographical barriers. They have become instrumental in the rapid dissemination of information, enabling widespread sharing of news, trends, and ideas on an unprecedented scale. Additionally, the social media is also providing platform for individuals to express their opinions, share experiences, and engage in discussions, thereby fostering a sense of community and inclusivity.



Figure 1.12: PBS's Social Media Platform

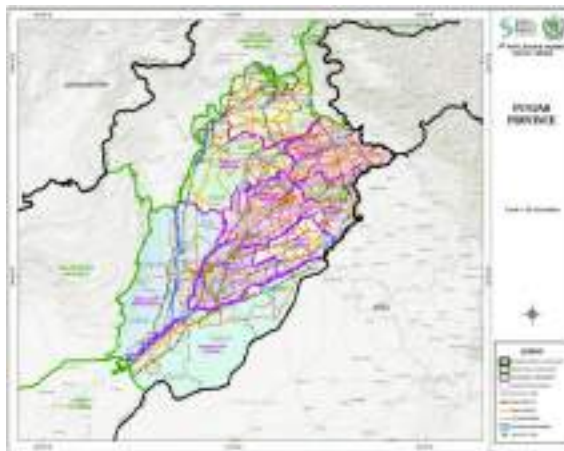
PBS, in conjunction with a comprehensive print and electronic media campaign, engaged based on their impressive presentation and creative work expertise of a social media advertising firm. Since the beginning of the Digital Census activities, the firm has successfully handled PBS's online presence across six prominent social media platforms, including Facebook and X (previously known as Twitter), and consistently excelled in effective spreading of census-related news and information to a wider audience.



GENERAL DESCRIPTION OF PUNJAB

2.1 Introduction

Punjab, which literally means 'the land of the five rivers', is Pakistan's most populous province, with a population of 127,688,922 (approximately 127 million) according to the Census-2023. It is the second largest province by land area after Balochistan. It is spread over 205,344 square kilometers (km²), which is 25.9% of the total area of the country. Punjab is located in the eastern part of the country and is drained by the "five rivers" namely the Jhelum, Chenab, Ravi, Sutlej, and Beas (in Indian Punjab), which are tributaries of the Indus River. It has the most fertile agricultural and irrigated areas of land, being a source of livelihood for a majority of its population.



To the North of the Punjab is the Khyber Pakhtunkhwa Province and the federal capital area of Islamabad, to the North-East is Azad Kashmir, to its South-East is India (Indian Punjab & Rajasthan), to the South-West is the province of Punjab while to the West are Baluchistan and the Federally Administered Tribal Areas (FATA).

The province is predominantly on plain level, however, there are some hilly areas in the North-West and extreme South-West. There is also a plateau adjacent to the mountains known as the Potohar plateau and a desert belt in the South Eastern part known as Cholistan.²

The history of Punjab dates back to the Indus civilization. The region has been invaded and ruled by many different empires and races including the Aryans, Persians, Greeks, Egyptians, Afghans, and Mongols. The population of Punjab had been pre-dominantly Hindu with large Buddhist minorities before it was conquered by Muhammad bin Qasim in 712 AD. He was the first to bring the message of Islam to the region. It was later spread through the teachings of various Sufi saints. The Mughals controlled the region from 1524-1739. It was their reign that saw the construction of the great architectural wonders such as the Badshahi Mosque and the Shalimar Gardens.

Following the decline and subsequent fall of the Mughal Empire, Maharaja Ranjeet Singh was the most prominent ruler of the Punjab. He established the Sikh Empire that lasted from 1799-1849. During his time a lot of importance was given to the landed aristocracy and he relied upon their loyal support to retain power. However, after his death, political chaos ensued and two of his successor maharajas were assassinated in the succession struggle. The British Empire took control and annexed Punjab in 1849 after two Anglo Sikh Wars. By virtue of its geo-political position, Punjab was one of

² (Punjab portal 2025) (https://punjab.gov.pk/about_punjab_geography Accessed on 03/01/2025)



Great Britain's most important assets in colonial India allowing it to execute control over the numerous princely states that made up the country. The British rule saw a series of measures being introduced including the introduction of western education, a new revenue system and the establishment of a new administrative system. However, the increasing resentment of the people towards their colonial masters brought Punjab at the center of the rising rebellion. The Jallianwala Bagh Massacre of 1919 took place in Amritsar and following the Pakistan Resolution of 1940, Punjab was at the heart of the independence struggle of modern day Pakistan. During the partition of India in 1947, most of the Muslim dominated areas went on to form the present day province of Punjab while the Sikh and Hindu dominated regions formed the Indian states of Punjab, Haryana, and Himachal Pradesh.

In 1955 due to the rising tensions between East and West Pakistan, Punjab lost its province status. In 1972 however, following the secession of East Pakistan and formation of Bangladesh, it regained its standing. In 1965 and 1971, Punjab witnessed the two wars between India and Pakistan. Today, Punjab remains the heartbeat of the nation and is at the center of all political and economic progress.

2.2 Topography

Punjab's geography mostly consists of the alluvial plains of the Indus River and its four major tributaries in Pakistan, the Jhelum, Chenab, Ravi, and Sutlej rivers. There are several mountainous regions including the Sulaiman Mountains in the southwest part of the province, and Margalla Hills, Salt Range, and Pothohar Plateau in the north. Murree Hills in the Northern Punjab make foothills of Himalayan range and in the far north is the Potohar Plateau.³

i. Mountainous Area

In the north, there are the outer ranges of the Himalayas: the Murree and the Kahuta hills in the north and the Pubbi hills of Gujrat in the south. In the south west, the hills of Sulaiman range running from north to south in the D.G. Khan Division are not higher than 1,200 meters and are dry and barren.

ii. Potohar Plateau

The region constituting the Potohar Plateau and the Salt Range lies to the south of the Northern Mountains between the Indus River on the west and the Jhelum River on the east. Its northern boundary is formed by the Kala Chitta Ranges and the Margalla Hills, and the southern boundary by the Salt Range. The Soan Basin is located between the northern and southern ranges.



Potohar Plateau

³ Tourism, Archaeology and Museums Department, Government of Punjab
(https://tourism.punjab.gov.pk/punjab_five_rivers_land) accessed on 3/01/2025



The Kala Chitta Range has an average height of 450- 900 metres cut by deep valleys. A few miles north, the Margalla Hills are visible with an average height of 900 metres, which extend eastward up to the Kaurang River. The main Potohar Plateau extends north of the Salt Range and is 300-600 metres high. The Salt Range, with an average height of 750-900 metres, has a steep face towards the south and slopes gently into the Potohar Plateau in the north. The Sakesar peak (1527 metres) is the highest point in the Salt Range.

iii. Upper Indus Plain

The Upper Indus Plain is different from the Lower Indus Plain as the major tributaries of the Indus; Jhelum, Chenab, Ravi, and Sutlej divide the land into several interfluvies, or doabs (a region lying between and reaching to the confluence of two rivers). The Upper Indus Plain is sub-divided into four large doabs namely Punjab Sagar, Chaj, Rachna and Bari, in addition to the Bahawalpur plain and Derajats, or Sulaiman piedmont.

2.3 Desert

i. Cholistan Desert

The Cholistan Desert, also locally known as Rohi, sprawls 30 kms from Bahawalpur District of Punjab and covers an area of 26,300 km. It adjoins the Thar Desert extending over to Punjab province and into India.

ii. Thal Desert

The Thal Desert is situated between the Jhelum and Punjab rivers near the Potohar Plateau. Its total length from north to south is 190 miles (306 kms), while its maximum breadth is 70 miles (113 kms) and minimum breadth 20 miles (32 kms). This region is divided into the districts of Bhakkar, Khushab, Mianwali, Jhang, Layyah, and Muzaffargarh.

2.4 Geographical Region

Punjab Province can be divided into four regions: Balai, Markazi, Gharbi and Zayreen.

i. Balai

Balai Punjab, also referred to as Shumali or Northern Punjab, is commonly categorized as the mountainous and hilly with plateau areas in the north of the province. The districts of Rawalpindi, Attock, Chakwal, Jhelum, Mianwali and the capital area of Islamabad, all fall within Northern Punjab. This region is differentiated from other parts of the Punjab by the prevalence of different dialects that are spoken here such as Potohari and Hindko. The



Salt Range Kallar Kahar



Potohar Plateau and the Salt Range constitute much of this area, and are rich in mineral resources including rock salt, limestone, gypsum, coal and oil.

The Salt Range is a hill system in the Punjab province of Pakistan, deriving its name from its extensive deposits of rock salt. The range extends along the south of the Potohar Plateau and the North of the Jhelum River. The Salt Range contains the great mines of Khewra, Kalabagh and Warcha which yield vast supplies of salt. Coal of a medium quality is also found. Sakaser and Tilla Jogian are the highest peaks of Salt Range. Namal Lake, Khabikki Lake and Uchhali Lake are lakes in the Salt Range.

ii. **Markazi**

Markazi or Central Punjab refers to the alluvial plains that are bounded by the southern edge of the Jhelum River down till the Sutlej River. The districts that make up Markazi Punjab are Sargodha, Mandi Bahauddin, Gujrat, Sialkot, Narowal, Gujranwala, Jhang, Hafizabad, Sheikhupura, Faisalabad, Lahore, Kasur, Toba Tek Singh, Okara, Pakpattan and Sahiwal,



Jhelum River

Central Punjab is by far the largest and most developed region of Punjab, consisting of one of the most expansive canal irrigation systems in the world. This provides a boosted agricultural output and a vast increase in arable land. At one point, the whole of British India had heavy dependency on the Punjab for wheat production. This region is also a heavy producer of rice and cotton.

iii. **Gharbi**

Gharbi or Western Punjab consists of the districts lying near to the Indus River. The topography is defined by the sand derived from the shifting flood plain deposits of the Indus. This includes mostly the Thal Desert and consists of the districts of Khushab, Bhakkar and Layyah. This region is rich in salt and coal and has a sizeable cement, sugar and textiles industry. However, this region is less developed having levels of poverty than the Northern or Central Punjab.

iv. **Zayreen**

Zayreen or Southern Punjab includes the districts of Multan, Dera Ghazi Khan, Khanewal, Lodhran, Vehari, Muzaffargarh, Bahawalnagar, Bahawalpur, Rajanpur and Rahim Yar Khan. The Cholistan Desert falls in this region within the districts of Bahawalpur, Bahawalnagar, and Rahim Yar Khan. This region is part of the Seraiki belt. This southern region of Punjab is mostly dependent on agriculture for its economy. The district of Bahawalpur leads in the production of cotton, and the export of mangoes. Principal industries include cotton ginning, flour, sugar and rice milling. The textile industry also contributes to the economy of this region. This region is the least-developed with significantly higher poverty levels than the other regions



2.5 Water Resources

All five tributaries of Indus: Jhelum, Chenab, Ravi, Beas and Sutlej rivers contain large volumes of water and carry an enormous quantity of sediments. The rivers Beas and Sutlej join-together before entering Pakistan, and the other three tributaries join at different points within Punjab. Eventually, all five tributaries meet to form "Panjnad" at Mithankot and travel for another 72 kms before joining the Indus River.



Rivers of Punjab

2.5.1 River

i. **Indus River**

The Indus is the greatest of all the rivers with a length of 2,928 kms. It flows in a deep gorge in the north between Attock District and Khyber Pakhtunkhwa and then moves along the western boundary of the province.

ii. **Jhelum River**

The Jhelum River enters the province near Jhelum city. It separates Jhelum District from Gujrat and Sargodha Districts, and passing through Sargodha and Jhang Districts joins Chenab River at Trimmu. Its total length is 688 kms.

iii. **Chenab River**

The Chenab River enters the Punjab Province in Sialkot District near the Marala headworks and separates Gujrat and Sargodha Districts from where Jhelum River joins it at Trimmu. Its total length is 1,024 kms.

iv. **Ravi River**

The Ravi River enters the Punjab Province at a point north of Lahore. It separates Sheikhupura, Faisalabad, Toba Tek Singh and Muzaffargarh districts from Lahore, Kasur, Okara, Sahiwal and Multan districts. River Ravi joins Chenab River at the junction of Khanewal, Jhang and Muzaffargarh districts. Its total length is 656 kms.

v. **Sutlej River**

The Sutlej River enters the province at the Sulaimanki headworks. Its length is 1,440 kms. It separates Okara, Pakpattan, Vehari, Lodhran and Multan districts from Bahawalnagar and Bahawalpur Districts, and joins the Chenab River at Uch.

The other important rivers include the Soan River in Potohar Plateau, Haro River north of the Kala Chitta Range in Attock District and Tawi River which flows through Sialkot District and falls into Chenab River.



2.5.2 Stream/ Lake

The nine major lakes include Kallar Kahar in Chakwal District, Ucchali, Khabeki and Jhalar lakes in Khushab, Namal in Mianwali, Malkana and Kohar Wala lakes near Trimmu Head Works in Jhang and Mangla in Jhelum.

i. Kallar Kahar Lake

Kallar Kahar Lake, situated in a beautiful valley in the southern mountainous area of Potohar plateau at an altitude of 1,500 feet above sea level, is a favourite recreational spot. There is a natural fresh- water spring at the base of the hills that fills Kallar Kahar Lake up to a level and then overflows and makes a stream towards the north. The lake is not deep, therefore, a lot of natural vegetation can be seen all around it, even in the middle of the lake.



ii. Jhalar Lake

Jhalar Lake is one of the most picturesque and beautiful lakes in the Soon Valley of Khushab district. With a length of 35 miles (56 kms) and 9 miles (15 kms) width, its elevation height is 950 feet above sea level. It is located 20 km south from Nowshera Jahlar road bypassing Surraki village. 45 species of migratory birds come in winters from the cold plains of Siberia to feed on the fish and other aquatic life founded in this breathtakingly beautiful lake.



iii. Khabeki Lake

Khabeki Lake, one-kilometer-wide and two kilometers long, is a salt-water lake in the gorgeous Sakesar valley in the Salt Range area of the Khushab district. This lake is the only spot in Punjab where beautiful bird flamingos are found.



iv. Namal Lake

The water of Namal Lake, spread over 5.5 square km, is located in one corner of the Namal Valley



in Mianwali and was formed following the construction of Namal Dam in 1913, some 32 kms from Mianwali city. There are mountains on its western and southern sides. On the other two sides are agricultural areas.

v. **Ucchali Lake**

Ucchali Lake, situated in the Soon Valley of Punjab's Khushab District, is a prominent tourist attraction renowned for its picturesque scenery. The lake was formed due to the absence of drainage in the Salt Range, resulting in saline water that renders it lifeless. Overlooked by Sakaser, the highest mountain in the Salt Range at 1,522 meters, the lake offers boating facilities for visitors



2.6 **Climate**

Punjab experiences a diverse climate characterized by significant seasonal variations. The region's climate is classified as tropical, semi-arid, and subtropical monsoon, with distinct hot summers and cold winters. Summers, spanning from April to June, are marked by intense heat, with temperatures often exceeding 45°C, particularly in June, the hottest month. The arrival of the southwest monsoon in July brings substantial rainfall, crucial for the region's agriculture. Rainfall is higher in the northern sub-mountain areas, ranging from 950 to 1,300 mm annually, while the plains receive between 500 to 800 mm.

Autumn, from October to November, acts as a transitional period with mild temperatures and reduced rainfall. Winters, from December to February, are generally cold, with January being the coldest month, and temperatures occasionally dropping to 0°C in certain areas. The brief spring season, occurring in March and April, features moderate temperatures and blooming flora, making it a pleasant period.

The climate varies across Punjab, with the northern areas, close to the Himalayas, experiencing cooler temperatures and higher rainfall, while the southern and western regions, such as the Cholistan Desert, are arid with minimal precipitation. Punjab's climate plays a pivotal role in determining agricultural practices, particularly during the monsoon season, which supports water-intensive crops like rice and sugarcane.



2.7 Flora and Fauna

i. Flora

In view of its diverse geographical features, the flora of Punjab varies from area to area. The main trees in the hilly areas include Deodar (*Cedrus deodar*), Biar (*Pinus eacclsa*), Paludar (*Abics smilhiana*) and Banangi (*Querreus lassiflora*). The Cheel (*Pinus longi*) covers the lower hills along with Kao (Wild



Deodar - Cedrus Deodara

olive), Phulai (*Acacia modesta*), Drek (*Melia semper virens*) and Sanatha (*Dodona viscosa*). The characteristic trees of Potohar are the Van (*Salvadora abeoides*), Karir (*Capparis aphylla*), Jand (*Prosopis spicigera*) and Malla (*Zizyphus nummularia*).

In the riverine areas, the most numerous trees are Kikar (*Acacia arbica*) and Shisham or Tahli (*Dalbergia sissoo*).

The most common tress found in the plains are Shisham (*Dalbergia sissoo*), Pipal (*Ficus religiosa*), Banyan or Bohar (*Ficus indica*), Mulberry (*Mourusalba*), Aam (*Magnifera indica*), Siris (*Albizzia lebbek*), Jamolan (*Engenia jambolana*), Lasura (*Teccoma unclulata*) and Amaltas (*Cassia amaltas*).



Shisham - Dalbergio Sissoo

ii. Fauna

Punjab provides habitats for a variety of wild animals such as tigers, leopards, hyenas, wolves, jackals, wild cats, foxes, badgers, wild boars, and blue bulls (Neel Gai), among others. At one time tigers, leopards and wild cats used to be common in the hilly forests but have now become relatively extinct. The only deer in the area are hog deer (Parha) and the ravine deer, also known as Hiran or Chinkara.



Chinkara Deer

In the Salt Range, wild hilly goats (Urial), Chinkara deer, wild pigs, wolves and foxes are commonly found. The hare and peacock (More) are found in some parts of Potohar area. In the Cholistan area, wolves, deers, blue bulls, jackals, mongooses, squirrels and wild rats are in abundance.



2.8 Birds

The various species of birds commonly found in Punjab include:

- Cheer pheasant
- White Crested Kaleej
- Peafowl
- Black Partridge (Kala Titar)
- Grey Partridge
- Chukor
- See see
- Common Quail
- Indian Sandgrouse
- Houbara Bustard
- Demoiselle Crane
- Greater Flamingo
- Graylag Goose
- Mallard
- Teal
- Wigeon
- Shovele

2.9 History

Punjab is an ancient centre of culture in the Indian subcontinent. It lies within the bounds of the Harappan civilization, the sophisticated urban (city-based) culture that flourished in the Indus Valley during the third millennium B.C. Harappa, one of the two great cities of this civilization, was located on the Ravi River which is now in Punjab Province.

Punjab has also been one of the great crossroads of southern Asian history. Nomadic tribes speaking Indo-European languages descended from the mountain passes in the northwest to settle on the plains of the Punjab around 1700 B.C. After that, Persians, Greeks, Huns, Turks, and Afghans were among the many races that entered the Indian subcontinent through the northwestern passes and left their mark on the region. Punjabis, who are basically of Aryan, or Indo-European ancestry, are the modern descendants of the mixture of people that passed through the region.

At times in the past, the Punjab and its population have enjoyed a special political identity as well as a cultural identity. During the sixteenth and seventeenth centuries A.D., the region was administered as a province of the Mughal Empire. As recently as the nineteenth century, much of the area was united under the Sikh nation of Ranjit Singh. Britain administered the Punjab as a province of its Indian Empire. However, in the redrawing of political boundaries in 1947, Punjab was divided between India and Pakistan. Despite having common cultural heritage, Punjabis are now either Indians or Pakistanis by nationality.



Punjabis are the largest ethnic population of Pakistan. Modern Punjabis are mostly a mixture of Indo-Scythian and Indo-Aryan people, with smaller amounts of Semitic ancestry. Indo-Scythians refers to Scythians (or Sakas), Iranian equestrian tribes who migrated into central and northern South Asia during the 2nd century B.C. to the 4th century A.D.

The Saraiki ethnic population resides in the southern part of Punjab, comprising of three administrative divisions Multan, Bahawalpur and Dera Gazi Khan. This part of Punjab is called the Saraiki belt, where Saraiki is the predominant language.

Punjabi food is very much liked in Pakistan and all over the world due to its unique and distinguished taste. The extensive cuisine of Punjab can be vegetarian and non-vegetarian. One commonality between all Punjabi dishes is the liberal usage of ghee, or clarified butter, and spices. Punjabis are fond of sweets also. Most Punjabi food is eaten with either rice or roti, flat round bread. There are some dishes that are exclusive to Punjab such as Maash ki Dal, Paratha, Makai ki rotti, Sarson ka Saag and in cities Chollay, Haleem, Biryani and other spicy dishes are popular.

Black tea, or Kali Chai, with milk is consumed in Punjabi areas of Pakistan and sometime green tea is also preferred. Milk is commonly mixed in tea, locally known as doodh patti, and is a favorite drink of Punjabis. Pakoras are a very popular snack consumed by Punjabis. Rabbri falooda and Kheer (sweet rice) are the desserts of choice.

1. **Biryani** is a delicious rice dish loaded with spicy marinated chicken, spices, and flavored rice. It is popular throughout Pakistan and is often served at special occasions, festivals, and family gatherings, known for its aromatic and flavorful combination.





2. **Sarson ka Saag** is a popular vegetarian dish from the Punjab region of Pakistan, made from mustard greens (sarson) cooked with spices like ginger, garlic, and green chilies. The dish is often mixed with other leafy vegetables for added flavor and is typically served with **makki di roti** (cornflatbread). It is a traditional winter dish, known for its rich, earthy taste and comforting nature.



3. **Seekh Kabab**: braised minced meat, commonly served with naan and flat bread. It is cooked in a *Tandoor*, and is often served with chutneys or mint sauce. It is often included in tandoori sampler platters, which contain a variety of tandoor cooked dishes.



4. **Chirry Chiyan**: In rural areas of southern Punjab, particularly in regions like Gujranwala, Multan, Bahawalpur, and Dera Ghazi Khan, eating small birds like sparrows (chirry chiyan) was a traditional practice rooted in local hunting and agrarian lifestyles. Sparrows were often hunted during winter and cooked in various ways, such as grilled, fried, or in spicy curries. Considered a delicacy, their meat was valued for its unique flavor, warming qualities, and association with folk remedies. While this practice has declined over time, it remains a nostalgic part of the cultural heritage in these parts of Punjab.



5. **Lassi** is a popular traditional yogurt-based drink. It is a blend of yogurt, water, and spices. Lassi is a savory drink, sometimes flavored with ground and roasted cumin. Sweet lassi, however, contains sugar and is often garnished with nuts or served with a dollop of cream for added richness.



2.12 Dress

The Punjabi dress is reflective of the bright and vibrant culture and lifestyle of the people. Punjab is well known for the use of phulkari (embroidery) in its costumes. In most of the villages of Punjab, men wear pagri (turban), dhoti/ lacha, kurta, and khusa. Women wear gharara, or choridar pajama or colorful shalwar kameez, paranda, choli/duppata, khusa, kola puri chappal or tillay wali jutti. In urban areas of Punjab, men and women follow latest trends and fashion. Generally, shalwar kameez is the most common dress in the province.



2.13 Religion

Although the population of Punjab is predominantly Muslim, other religions are also represented due to the province's long and varied history. Early Hinduism took shape in the Punjab, Buddhism



flourished in the region, and followers of Islam held political power in the area for nearly six centuries. Sikhism had its origins in the Punjab as well, where Sikh states survived until the middle of the twentieth century. The British annexed the Punjab in the nineteenth century and introduced Christianity to the region. Thus, Islam, Christianity, Hinduism, Ahmadiyya, and Scheduled Castes are all represented in Punjab.

2.14 Language and Dwelling

The major and native language spoken in the province is Punjabi (which is written in a Shahmukhi script in Pakistan). Seraiki is mostly spoken in South Punjab, and Pashto is spoken in some parts of North West Punjab, especially in Attock and Mianwali Districts near Khyber Pakhtunkhwa Province. Other languages spoken in the province include Balochi, Mewati, Hindko, Punjabi, Kashmiri, Brahvi, Kohistani, Shina, Balti, and various others.

2.15 Tradition and Custom

The culture of Punjab derives its basis from the institution of Sufi saints, who spread Islam and preached and lived the Muslim way of life. People have festivities to commemorate these traditions. The fairs and festivals of Punjab reflect the entire gamut of its folk life and cultural traditions.

i. Punjabi Wedding

Punjabi weddings are based on traditions and are conducted with strong reflection of the Punjabi culture followed by several pre-wedding customs and rituals (*dholki*, *mayun*, *ubtan* etc.). Punjabi weddings are very loud, energetic, full of music, colors, fancy-dresses, food and dancing. Punjabi weddings have many customs and ceremonies that have evolved since traditional times. In cities, the wedding are celebrated following a blend of modern and traditional customs and the ceremony generally lasts for three days, *Mehndi*, *Barat* and *Walima*, followed by *Chauti* (bringing the bride back to her parents' home the next day).



ii. Literature

Punjab is very rich with literature and Sufism adds more to its literature. Punjabi poetry is renowned for its profound meaning, beautiful and hopeful use of words. The large number of Punjabi poetry is being translated throughout the world into many languages. Some famous poets of Punjabi are Sultan Bahu, Mia Mohammad Baksh, Baba Farid, Shah Hussain, Anwar Masood etc. Waris Shah, whose contribution to Punjabi literature is best-known for his seminal work in *Heer Ranjha*, known as Shakespeare of Punjabi language. Bulleh Shah was a Punjabi Sufi poet, a humanist and a philosopher. The verse from Bulleh Shah primarily employed is called the *Kafi*, a style of Punjabi. Some other popular folk tales of Punjab include *Sassi-Punnu*, *Sohni Mahiwal* etc.

that are passing through generations.

iii. Art and Craft

Punjab has the major manufacturing industry in Pakistan's economy with a variety of arts and crafts of its own. The main crafts created in the highlands and other rural areas of Punjab are basketry and pottery which are famous for their modern and traditional designs all over the world. Moreover, bone work, textile, cloth woven on handlooms with stunning prints is embroidered in the rural-areas and the weavers produce colorful cloths like cotton, silk etc. embroidery, weaving, carpets, stone craft, jewelry, metal work along with truck art and other wood works. The craft of Punjab is its fundamental soul, and its crafts create its entity.



2.16 Music and Dance

Folk music is often perceived as the traditional music of Punjab and typically has communal authorship. This aspect of folk music has changed with time, but the older categories of folk begin with the dhadi genre, which follows ideas of communal authorship. The folk dhadi genre emphasizes stories of heroism and love stories, as exemplified by the numerous ballads of the legendary romantic tales of Heer-Ranjha and Sahiba-Mirza. Folk music is also commonly used in various life-cycle events in the Punjab region. Folk music of the Punjab is produced using the traditional musical instruments like Tumbi, Algoze, Dhadd, Sarangi, Chimta and more. There is a wide range of folk songs for every occasion from birth to death including marriage, festivals, fairs and religious ceremonies.



Sufi music includes the singing of Sufi poetry in several genres. Some of the poets whose compositions are often sung include Baba Farid, Bulleh Shah, Shah Hussain, Waris Shah, and Mian Muhammad Bakhsh. The dance traditions of Punjab represent a collection of folk art forms that have evolved significantly and changed in meaning throughout the centuries. Punjab's rich repertoire of folk dances includes *jhummar*, *sammi*, *luddi*, *dandas*, *nachar* and *giddha*.



2.17 Places of Interest

The following is a list of a few prominent places of interest in Punjab.



Lahore Fort

The Lahore Fort is a citadel in the city of Lahore, the fortress is located at the northern end of Lahore's Walled City, and spreads over an area greater than 20 hectares. It contains 21 notable monuments, some of which date to the era of Emperor Akbar.



Katas Raj Temple

The Katas Raj Temples are several Hindu temples connected to one another by walkways. The temples form a complex surrounding a pond named Katas, which is regarded as sacred by Hindus. This historic site, located in Punjab, Pakistan, is believed to date back to the Mahabharata era and holds immense religious and cultural significance.



Derawar Fort

Located about 100 km from Bahawalpur, Derawar Fort is the most magnificently sustained fort in Pakistan. It is a top tourist attraction of Cholistan Desert. Each wall is 204m in length, 30m high, and the fort has a circumference of about 1.5km. Hindu Rajput, Rai Jajja Bhati built the fort.



Shalimar Garden

Shalimar Garden is a Mughal Garden complex located in Lahore, capital of the Pakistani province of Punjab. The gardens date from the period when the Mughal Empire was at its artistic and aesthetic zenith and are now one of Pakistan's most popular tourist destinations. Construction of the gardens began in 1641 during the reign of Emperor Shah Jahan and was completed in 1642.



Rohtas Fort

Rohtas Fort, or Qila Rohtas is a garrison fort with great historical value situated in the district Jehlum. The Afghan king, Farid Khan, more commonly known as Sher Shah Suri, build this fort in the 16th century. Its construction took as many as 8 years for completion.



Noor Mahal

Noor Mahal (Noor Palace) is a palace located in Bahawalpur, Pakistan. Built in 1875 A.D., the palace is nearly one hundred and fifty years old. Legend has it that the Nawab Subah Sadiq Muhammad Khan IV laid the foundation of this palace in honor of his wife. The construction work for Noor Mahal began in 1872 A.D. and completed in 1875 A.D.

2.18 Administration

Punjab is divided into divisions and each division is further sub-divided into districts. Likewise, each district is divided into tehsils. The administrative units of Punjab are shown in Table 2.1.

Table 2.1: Administrative Units of Punjab Province

Administrative Area	Divisions	Districts	Tehsils	Villages/Mouzas	Urban Areas
Pakistan	30	136	591	46,697	615
Punjab	9	36	146	24,700	282

2.19 Legislative Branch

The Punjab Assembly is a unicameral legislature of elected Members of the province. Article 106 of the constitution provides that each Provincial Assembly shall consist of general seats and seats reserved only for women and non-Muslims. The same article specifies that the Provincial Assembly of Punjab will have a total of 371 seats: 297 general seats, 66 reserved for women and 8 reserved for non-Muslims.

2.19.1 Provincial Government

The Government of Punjab is a provincial government in the federal structure of Pakistan. It is based in Lahore, the capital of Punjab Province.

The Governor of Punjab serves as the ceremonial head of the province, with most executive powers being vested in the Chief Minister.

The Chief Minister (CM) is elected by the Provincial Assembly of the Punjab to serve as head of the Provincial Government. There are 42 departments in Punjab government. Each Department is headed by a



provincial Minister (elected member of the provincial assembly). All Ministers report to the CM, who is the Chief Executive; and all Secretaries report to Chief Secretary Punjab, who is appointed by the Prime Minister of Pakistan. In addition to these departments, there are several Autonomous Bodies and Attached Departments that report directly to either the Secretaries or the Chief Secretary.

2.20 Judiciary

The judicial system of Punjab includes a High Court, Sessions Courts, Magistrate Courts and other special courts and tribunals. The Lahore High Court was established as a high court on 21 March 1919. The Lahore High Court has jurisdiction over in all the Punjab. The High Court's principal seat is in Lahore, but there are benches in three other cities i.e. Rawalpindi, Multan and Bahawalpur.

District Courts exist in every district of the province and have civil and criminal jurisdiction. Apart from that, every town and city has Civil and Judicial Magistrate Courts, each of which are allocated a local jurisdiction. Trials of all non-bail able offences are decided by these courts.

2.21 Police

Before partition, Punjab Police was organized on the pattern of Punjab Police, drawing inspiration from the Irish constabulary. In 1860, the Central Government of India passed the Police Act of 1861 according to which an Inspector General of Police (IGP) was appointed for Punjab province and the command of police at the district level was placed in the hands of District Superintendents.

The organizational structure that followed this Act largely persists to this day. Police became a subject to be administered by the provinces, further divided into police jurisdictions corresponding to divisions and districts. The police are given exclusive responsibility for prevention and detection of crime. In the maintenance of public order, police are responsible to the District Magistrate.

More recently, in line with the devolution of power plan under the General Musharraf's regime, the office of the District Magistrate was abolished in 2001 and a system of Public Safety Commissions was introduced. These changes were incorporated into a new Police Law which was promulgated in 2002. Apart from Public Safety Commissions, the Police Order 2002 also provided for a professional Police Complaints Authority, increased powers for the IGP, and separated the watch and ward system and investigation functions of the police. Table 2.2 provides the division-wise breakdown of total number of police stations and police posts in Punjab province.



Table 2.2: Division Wise number of Police stations and Police Points

S.No.	Administrative Units	Police Stations	Police Posts
1.	Punjab Province	744	541
2.	Bahawalpur Division	74	29
3.	D.G Khan Division	66	62
4.	Faisalabad Division	80	87
5.	Gujranwala Division	117	94
6.	Lahore Division	131	107
7.	Multan Division	81	27
8.	Rawalpindi Division	72	86
9.	Sahiwal Division	48	30
10.	Sargodha Division	67	19

2.22 Administrative Changes

The administrative structure of Punjab consists of Divisions, which are further subdivided into Districts. Districts are divided into Tehsils, which are then broken down into Qanungo Halqas, followed by Patwar Circles, and ultimately, Mauzas/Villages. Notably, some boundary changes between districts occurred between the 2017 and 2023 Censuses. It is pertinent to mention that no substantial administrative change observed between census 2017 and 2023 as only one tehsil was created in Muzaffargarh District namely Chowk Sarwar Shaheed Tehsil by bifurcating areas of Kot Addu Tehsil. The changes are given below in Table 2.3.

Table 2.3: Changes in the Administrative Units of Punjab Province after Census-2017-2023

Sl. No.	Name of area	Localities added to (+) / taken out (-) Description as in 2017 census report	Area	Population	Area (adjusted 2023)	Population (adjusted 2023)
1	Kot Addu Tehsil	(-) Chowk Sarwar Shaheed QH, Wandhar QH, 147/M.L PC, Rakh Tibba Mustaqil PC, 515/T.D.A PC, 142/M.L PC, Talae Nur Shah Sharqi PC, Mir Pur PC, 578/T D A PC, Talae Nur Shah Gharbi PC of Kot Addu No.1 QH, Talae Chandhrar Sharqi PC of Kot Addu No.2 QH, Chowk Sarwar Shaheed M.C.	3471	1,347,501	1686	981,787
2.	Chowk Sarwar Shaheed Tehsil	(+) Formed of areas mentioned at SL.NO.1	1785	365,714	-	-



Punjab is Pakistan's largest economy, contributing a significant share to the national GDP. The province has shown remarkable growth, with substantial contributions in the service, agriculture, and manufacturing sectors. Punjab leads the country in agricultural output, particularly in rice, cotton, and wheat, and is a major player in manufacturing, including textiles, sports goods, surgical instruments, cement, and processed foods.

Punjab also has relatively low poverty rates, although there is a noticeable economic divide between the northern and southern regions. While districts like Sialkot are more prosperous, areas in the south, such as Rajanpur, face higher poverty rates. This economic disparity highlights the need for continued development in the southern parts of the province.

Punjab's economy has experienced notable structural shifts over recent decades, with a gradual reduction in the prominence of agriculture and a significant expansion in the services sector. Agriculture, while foundational to Punjab's economy, has become a smaller part of overall economic output as the province moves towards a more diversified economic structure.

The services sector has consistently strengthened, making it the leading sector in Punjab's economy. This growth aligns with national patterns and highlights the province's strategic shift toward a service-oriented economy. Manufacturing, meanwhile, has maintained a stable presence, contributing steadily to provincial output.

The continued expansion of the services sector offers Punjab opportunities for private-sector-led development, supporting government initiatives aimed at sustainable economic growth and resilience. This structural transformation underscores the province's capacity to adapt to changing economic conditions and sets the stage for further growth in high-potential sectors.

Despite the lack of coastline, Punjab is the most industrialized province of Pakistan. Its manufacturing industries produce textiles, sports goods, heavy machinery, electrical appliances, surgical instruments, vehicles and auto parts etc.

Punjab has more than 48,000 industrial units out of which 39,033 are small and cottage size



industrial units. The number of textile units is 11,820, the ginning industries are 6,778 and there are 6,355 units for processing of agricultural raw materials including food and feed industries. There are different pockets of industrial clusters spread across Punjab. The Small and Medium (SME) Clusters in Punjab have huge potential for development that is critical to the industrial growth of the province.

ii. Manufacturing

In Pakistan, manufacturing sector contributes 12.79 percent to Gross Domestic Product (GDP) and the sector employs 16.1 percent of the country's labor force.⁴ The manufacturing sector constitutes about 20% of the output produced in the national economy with Punjab having nearly 70,000 major industrial units.⁵

iii. Textiles

Pakistan is the 8th largest exporter of textile products in Asia. It is 4th largest producer and 3rd largest consumer of cotton. Textile sector is the backbone of Pakistan's economy. It is the single largest sector which contributes 60% to Pakistan's total exports. The textile industry derives its competitiveness from availability of cheap raw material i.e. cotton, a pool of skilled manpower and widespread ancillary support from dyeing, chemical and other industries. It is worthy to mention that textile sector contributes 8.5 % to Gross Domestic Product of the country. There are 423 textile industries working in the country. Punjab has the biggest share in the textile sector as around 70% of the textile industry is based in the province of Punjab and Faisalabad city is considered to be the hub. (Punjab Board of Investment and Trade).

iv. Cottage and Small Industries

Punjab Small Industries Corporation (PSIC) has been established to develop this sector of economy. Cottage and Small Scale Industries are labor-intensive and provide employment to 80% of the industrial labor force of the province. This reduces the unemployment and offers opportunities for self-employment. Cottage or Small Scale Industries like carpet- weaving, candle-making and handicrafts can be established in houses and women can be gainfully employed. These industries increase the economic activity rate of the labor force and also meet the local demands for industrial goods, and save foreign exchange spent on imports There is a great demand for rugs, carpets, brassware, handicrafts and embroidered work in the international market representing 30% of the export receipts of the manufacturing sector. Lahore and Gujranwala Divisions have the largest concentration of small light engineering units. The district of Sialkot excels in sports goods, surgical instruments and cutlery goods. (Punjab Board of Investment and Trade).

⁴ (Pakistan Economic survey 2020-21)

⁵ (Punjab Board of Investment and Trade) (<https://pbit.gop.pk/> Accessed on 03/01/2025)



v. Private Sector

The private sector remains a cornerstone of Punjab's economy, driving a substantial portion of the province's output in goods and services. With an ongoing commitment to enhancing public-private partnerships, the government has continued to lay a supportive foundation, fostering collaboration and investment through policies aimed at enabling private sector participation in development projects across Punjab.

2.25 Agriculture

Agriculture is the mainstay of Pakistan's economy. It accounts for 23% of the GDP and together with agro-based products fetches 80% of the country's total export earnings. More than 42.3% of the labor force is engaged in this sector. The most populated province of Punjab provides the largest share in national agricultural production. Agriculture offers 19% of the GDP and gives employment to 48% of the population. It contributes in provision of raw materials to major industries; textile, leather, rice processing, edible oil, sugar and various food processing industries. Pakistan's total export has a three fourth share of agriculture and 60% of this share comes from Punjab. Over years, Punjab has tried to meet the challenges of food security.⁶

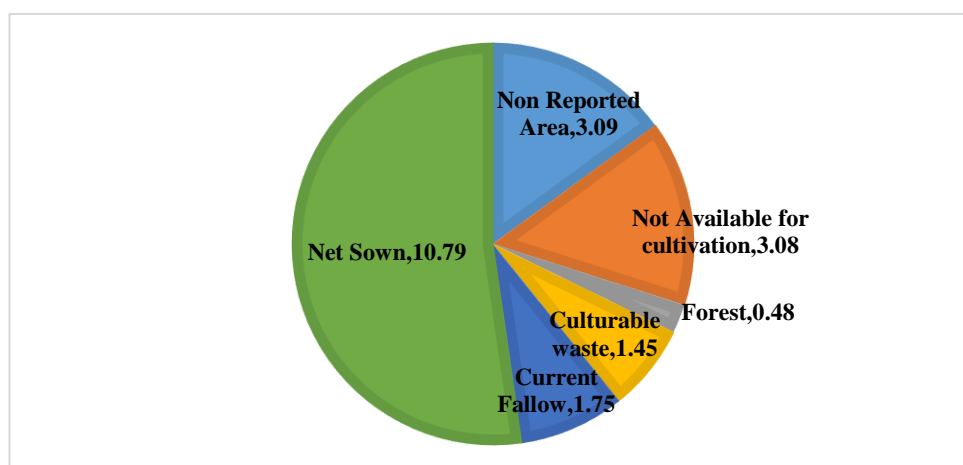
i. Land Utilization

Punjab is the second largest province constituting 25.9% of the country's total land mass, with an area of 20.63 million hectares. Land utilization statistics are available for 85.01% of the aggregate territory, while 14.99% of land remains unreported. Another 14.93% of the area is not available for agriculture due to either being totally infertile or being occupied by infrastructure. Consequently, only 70.09% of the land is available for cropping (Figure 2.1). The agricultural statistics of Punjab shows that Punjab's total cropped area stands at 15.52 million hectares out of which 5.60 million hectares were sown more than once during the year, 2020-21. In 2015, wheat was sown on 37% of the land; similarly, cotton occupied 7% and rice 14% of Punjab's total cultivated area. To fulfill the needs of livestock population of the province fodder was sown on 20% of the area followed by maize and sugarcane occupying 5% and 5% area respectively. While other crops were cultivated only in 13% of the area.

⁶ (Agriculture Department of Punjab) (<https://www.agripunjab.gov.pk/overview> Accessed on 25/1/2025).



Figure 2.1: Percent Distribution of Land Utilization in Punjab Province 2020-21



Punjab has two cropping seasons namely Kharif and Rabi. Kharif sowing season starts from April-June and is harvested during October-December. Rice, sugarcane, cotton, maize, moong, mash, bajra and jowar are Kharif crops. Rabi, the second sowing season, begins in October- December and is harvested in April-May. Wheat, gram, lentil (masoor), tobacco, rapeseed, barley and mustard are Rabi crops. Table 2.4 provides statistics of the area, production and yield of important Kharif and Rabi Crops.

Table 2.4: Estimates of Major Rabi and Kharif Crops in Punjab Province

Crops	Area (000 Hectares)	Production (000 Tonnes)	Yield (Kgs/Hectares)
Major Kharif Crops			
Rice	2,555	5,779	2,262
Cotton	1,279	5,168 (000 bales)	686 (Lint/hectare)
Sugarcane	869	64,245	74 (tons)
Jowar	38	30	799
Bajra	138	178	1,292
Maize	1,185	8,629	7,280
Major Rabi Crops			
Wheat	6,560	20,032	3,053
Gram	779	250	321
Barley	1	2	1,363
Rapeseed & Mustard	237	403	1,701
Sunflower	20	48.2	2,410

Source: Punjab Development Statistics-2023

i. Irrigation

Punjab has one of the most extensive irrigation networks in the world. A total of 15,134, 000 hectares of land in Punjab is irrigated. Punjab witnesses a confluence of five rivers, and the Indus River and its tributaries support the livelihood of millions of people in the province.



Table 2.5: Area Irrigated by Various Modes of Irrigation in Punjab

Area (In “000” Hectares) Irrigated By					
Total	Canal	Canal Tube-Wells	Canal-Wells	Wells	Tube-Wells
15,134	3,135	8,414	231	175	3,056

Source: Punjab Development Statistics-2023

Table 2.6 gives details regarding the number of tube wells functioning in Punjab Province.

Table 2.6: Number of Government and Private Tube-Wells in Punjab Province

Category	Electric	Diesel	Total
Government	987	141	1,128
Private	196,611	987,376	1,183,987
Total	197,598	987,517	1,185,115

Source: Punjab Development Statistics-2023

2.26 Livestock

Livestock is a cornerstone of Pakistan's rural economy, deeply engaging over 8 million rural families and contributing 35-40% of their income. The sector plays a crucial role in the national economy, accounting for 60.84% of agricultural value addition and 14.63% of the national GDP during FY2024. In 2023-24, the gross value addition of livestock rose to Rs 5,804 billion, reflecting a 3.9% growth from the previous year. Recognizing its potential for economic growth, food security, and poverty alleviation, the government has prioritized livestock development through private-sector-led initiatives supported by public policy interventions.

The government has implemented strategies to enhance veterinary health coverage, improve breeding practices, adopt artificial reproductive techniques, control diseases such as FMD, PPR, LSD, and Avian Influenza, and develop disease-free zones. It also focuses on breed improvement, identifying breeds suited to various ecological zones, and importing high-yield genetic material. To boost exports, initiatives like modern slaughterhouses and export meat processing zones are being introduced. Livestock population estimates for the last three years are summarized in Table 2.7, showing consistent growth across major species.⁷

Table 2.7: Estimated Livestock Population (Million Numbers)

Species	2021-22	2022-23	2023-24
Cattle	53.4	55.5	57.5
Buffalo	43.7	45.0	46.3
Sheep	31.9	32.3	32.7
Goat	82.5	84.7	87.0
Camels	1.1	1.1	1.2
Horses	0.4	0.4	0.4
Asses	5.7	5.8	5.9
Mules	0.2	0.2	0.2

Source: Ministry of National Food Security & Research

⁷ Pakistan Economic Survey 2023-24.



2.27 Fisheries

The Punjab Fisheries Department is responsible for the conservation, management and development of natural fisheries resources, promote aquaculture practices in private sector to bridge gap of protein deficiency in the diet of common man, provide white meat to improve the health of people, utilize the untapped fisheries resources to obtain maximum production and increase Punjab's share in the national economy. As of 2022, 120,000 Metric Ton of fish were produced in Punjab.⁸

2.28 Mineral Resource

Punjab is blessed with the rich endowment of mineral resources as presently more than 20 minerals are under excavation including coal, rock salt, limestone, gypsum and silica sand etc. Geologically, minerals are found in the main mountain ranges falling under the provincial jurisdiction of the Punjab. These include the Salt range, Kala Chitta Range, Potowar Plateau and Sulaiman Range. The mineral sector in the Punjab provides the resource base to a number of industries including cement, soda ash, caustic soda, ceramics, glass, fertilizer, plastic, paper, ghee, construction and steel industries. Apart from these industries, the majority of the mining activity is limited to the extraction and sale of raw minerals with very little or no value addition to the mineral through processing and industrialization.

The mining industry in the Punjab provides employment opportunities to nearly 40,000 people including skilled, unskilled labor and professionals. The majority of the skilled and unskilled work force come to Punjab from the northern region of Pakistan during the winters and follows a migratory trend. A major reason for the migratory trend of labor is due to the lack of facilities such as adequate labor barracks/colonies and other benefits related to the health, safety and education of mineworkers and their families.

i. Coal

In Punjab coal is present in the Salt Range and Markawal. The estimated deposits of coal in this region are 235 million tonnes. Medium to good quality bituminous / sub bituminous coal is being mined from the Salt Range, where resources of around 600 million tons have been determined. Eastern Sulaiman Range in DG Khan is another potential area for the exploration of Coal.

ii. Salt

Good quality rock salt deposits are found throughout the southern escarpment of the Salt Range in the shape of Salt Range Formation.

iii. Iron Ore

It has been estimated that 300MT iron ore deposits exist near Kalabagh, District Mianwal and 150 million tons of iron ore reserves exist at Chiniot-Rajoa.

iv. Others

Punjab's limestone reserves have a cement production capacity of over 17 MT per annum. With

⁸ Punjab Development Statistics-2023



11 large cement plants operating in the province, the limestone deposits in the Salt Range, Margalla Hills and Koh-e-Suleman Range can be exploited to provide for existing, and installation of new, cement plants. Limestone or slaked lime may also be used to provide for the rubber industry, steel mills blast furnaces and building and construction. Good quality of gypsum and average quality of bauxite / laterite deposits are present and abundant limestone deposits are available in all the mountain ranges of Punjab. Medium to good quality silica sand and fireclay deposits are available and being excavated for the manufacturing of glass and ceramic products of Punjab. Dolomite deposits are developed in the Kingriali Formation in Mianwali District. Other industrial minerals include Fuller's Earth in DG Khan, Bentonite in District Jhelum and Ocher/ red oxide in Mianwali District. Abundant building material including river sand, sandstone, gravel and slate-stone deposits are available in the readily accessible areas of the province.

2.29 Transport Sector in Punjab

Efficient transportation is the backbone of Punjab's economic and social development, facilitating trade, mobility, and connectivity across the province. Punjab's strategic geographical position, coupled with its status as the most populous province, underscores the critical role of an advanced transport system in driving regional and national growth. In recent years, the government of Punjab has made significant investments to modernize its transport infrastructure, addressing the increasing demand for mobility and ensuring smoother connectivity between urban and rural areas.

The transport sector in Punjab encompasses a diverse mix of railways, roads, and modern transit systems. The province has also leveraged public-private partnerships and international collaborations, such as the **China-Pakistan Economic Corridor (CPEC)**, to enhance its transport network. These initiatives not only aim to improve logistical efficiency but also align with the broader goal of sustainable and inclusive development.

From state-of-the-art metro systems in urban centers to expansive motorways connecting cities, Punjab's transport sector exemplifies progress in mobility and infrastructure. Below is an overview of key transportation projects and milestones shaping the province's transportation landscape:

2.29.1 Railway Operations

In 2021-22, Pakistan's transport sector experienced a slight decline in railway operations. There was a 0.2% decrease in the total number of locomotives from 2020-21. Despite this, the railways successfully transported 35 million passengers and moved 8.0 million metric tons of commodities. However, freight transport saw a 1.4% drop compared to the previous year.

2.29.2 Road Transport

Punjab has witnessed substantial growth in road transport, with the number of motor vehicles registered in the province reaching 21.1 million by June 30, 2022. This highlights the extensive reliance on road transportation for daily commuting and goods movement within the region. (Punjab development statistics 2023)



51



Stretching 309 kilometers, the M-4 Motorway connects Pindi Bhattian to Multan and was completed in 2019. With lanes varying between four and six, it serves as a key link for travelers and goods moving between central and southern Punjab. This motorway not only reduces travel time but also improves regional trade, making it an important economic and transportation route for the province.

The M-5 Motorway, completed in 2019, runs from Multan to Sukkur, covering a distance of 392 kilometers with six lanes. This motorway is vital for improving access to the southern regions of Punjab and Punjab, boosting the flow of goods and services. It enhances connectivity between major cities, promoting trade, tourism, and regional development.

Opened in 2020, the M-11 Motorway stretches 103 kilometers from Lahore to Sialkot. With four lanes, it significantly improves travel efficiency between Lahore and Sialkot, two major industrial hubs in Punjab. The motorway plays a key role in facilitating the movement of goods, particularly for the manufacturing and export industries in Sialkot, strengthening the regional economy.

The M-14 Motorway, which stretches 285 kilometers from Islamabad to Dera Ismail Khan, was completed in 2022. This four-lane motorway offers improved access to southern Khyber Pakhtunkhwa and contributes to the region's economic integration with Islamabad and other northern areas. It enhances connectivity for both travelers and cargo, supporting economic activities and regional development in this underserved area.

The M-15 Motorway, also known as the Hazara Motorway, was completed in 2020. Spanning 180 kilometers from Hasan Abdal to Thakot, the motorway features six, four, and two lanes. It connects the Hazara region to major cities, promoting tourism, especially to the scenic areas of Abbottabad and Mansehra, while also supporting trade and local economic development in this historically significant area.

These motorways are vital pieces of infrastructure that significantly enhance connectivity across Punjab and beyond, driving economic activity, improving transportation efficiency, and promoting regional integration.

i. Information and Communication Technology

Information technology has assumed the central role in the development of knowledge economies and transformation of the world into a global village. The IT sector is growing rapidly in Pakistan and particularly in Punjab. The Government of Punjab has been supporting IT sector through numerous



initiatives that include various sustainable development and accelerated digitization projects, research and innovation, establishment of software technology parks, provision of subsidized bandwidth, international certifications, internships and trainings. Moreover, the government is planning for establishment of "Technology Incubators" and "Venture Funds" resulting in acceleration of entrepreneurship locally. Various incentives on part of the government have been put in place in order to strengthen the growth of the sector which include 100% equity ownership, 100% repatriation of capital/dividends, and tax exemption on IT export revenues and subsidized state of the art Software Technology Parks (Punjab Board of Investment and Trade).

ii. Telecommunication

Pakistan is fast becoming the destination of choice for a significant number of international IT companies looking to start their operations system here. The readily availability of skilled professionals, an appropriate IT infrastructure, and affordable rates for connectivity result in considerable time and cost-savings for investors. Currently Telecom sector of Pakistan has attracted substantial investment after deregulation.

iii. Post Office

Postal service is of great significance in the social sector as it provides personal as well as commercial service to the members of the society. Pakistan Postal services Corporation is rendering the best services in Punjab throughout its length and breadth. The number of post offices operating in Punjab stood at 2317 in 2021-22.

2.31 Power Projects in Punjab

Punjab, the economic heart of Pakistan, is central to the nation's energy landscape. As the most populous province, it accounts for a substantial share of Pakistan's energy consumption, making a reliable energy supply crucial for sustaining its industrial, agricultural, and urban growth. Recognizing the critical role of energy in driving development, the Punjab government has adopted a multi-pronged strategy to address energy challenges, focusing on enhancing generation capacity, promoting renewable energy, and ensuring energy efficiency.

The provincial government, through its **Energy Department**, has implemented initiatives to strengthen Punjab's energy infrastructure. Following the **18th Constitutional Amendment**, Punjab gained the authority to develop and manage its energy projects, paving the way for provincial-led energy solutions. The government has emphasized leveraging Punjab's abundant solar energy potential, particularly in southern regions like Bahawalpur, which receive some of the highest solar irradiance levels in the country.

As part of its renewable energy vision, Punjab has been at the forefront of solar energy development. The province aims to reduce its dependence on fossil fuels by increasing the share of clean energy in its energy mix. Solar energy, with its environmental benefits and potential for scalability, forms



a cornerstone of Punjab's sustainable energy strategy. This approach aligns with global climate goals and Pakistan's commitment to reducing carbon emissions under the Paris Agreement. With this strategic foundation, one of the landmark projects in Punjab's energy journey is the **Quaid-e-Azam Solar Park**, a testament to the province's commitment to renewable energy and sustainable development. Given below is the detail of some of the power project.

2.31.1 Quaid-e-Azam Solar Park



The Quaid-e-Azam Solar Park, located in Bahawalpur, Punjab, Pakistan, is one of the country's largest and most ambitious solar power projects. Launched in 2014, it marks a significant milestone in Pakistan's efforts to harness renewable energy. Initially designed with a capacity of 100 megawatts, the park's subsequent phases are set to expand its capacity to 1,000 megawatts. Operated by the Punjab government, the solar park plays a crucial role in alleviating regional energy shortages while fostering sustainable energy solutions. It aligns with Pakistan's broader environmental goals by reducing dependence on fossil fuels and cutting carbon emissions, contributing to a cleaner, greener future.¹²

2.31.2 Sahiwal Coal Power Project

The Sahiwal Coal Power Project, located in Sahiwal, Punjab, Pakistan, is a significant energy infrastructure initiative with an installed capacity of 1,320 megawatts. Developed by Huaneng Shandong Ruyi (Pakistan) Energy, the plant commenced full operations on July 3, 2017, at a cost of approximately \$1.91 billion USD. It utilizes imported bituminous coal from Indonesia and South Africa, requiring an estimated 4.48 million tons of coal annually. The project was completed in just 22 months, highlighting its efficient construction timeline under the China-Pakistan Economic Corridor (CPEC) framework.

Despite its contribution to alleviating Pakistan's energy crisis, the project has faced environmental concerns due to its location in a fertile agricultural region. To mitigate these impacts, advanced technologies such as electrostatic precipitators, desulphurization systems, and anti-seepage ash yards

¹² Quaid-e-Azam Solar Power PVT Ltd (<https://www.qasolar.com/about-1/>) accessed on 27/12/2024.



were installed. The Sahiwal Coal Power Project plays a crucial role in Pakistan's energy landscape while focusing on balancing development with environmental sustainability.¹³

2.31.3 Balloki Power Plant

The Balloki Power Plant, located in the Kasur district of Punjab, Pakistan, is a 1,223 MW combined-cycle gas-fired facility developed by the National Power Parks Management Company Limited (NPPMCL). Utilizing regasified liquefied natural gas (RLNG) as its primary fuel, the plant began commercial operations in July 2018. It is recognized as one of the most efficient power plants globally, capable of generating electricity sufficient for more than six million Pakistani homes.¹⁴



2.31.4 Haveli Bahadur Shah Power Plant

The Haveli Bahadur Shah Power Plant, a 1,230 MW combined-cycle project in Punjab, Pakistan, is the world's most efficient power plant, achieving an unprecedented 62.45% efficiency on RLNG fuel. Operated with advanced General Electric Frame 9HA.01 gas turbines and an Alstom steam turbine, the plant ensures significant fuel cost savings for the national exchequer and provides affordable electricity. Strategically located near load centers with grid connectivity and water availability, the plant was constructed by Power Construction Corporation of China, with operations and maintenance handled by its subsidiary SEPCOIII. The facility commenced simple cycle operations (760 MW) on July 18, 2017, and full combined-cycle operations (1,215 MW) on May 9, 2018.¹⁵



2.31.5 Bhikhi RLNG Power Plant

The Bhikhi RLNG Power Plant, located in Bhikhi, Sheikhpura District, Punjab, is a significant contributor to Pakistan's energy infrastructure. Developed through a joint venture between Harbin Electric International and Habib Rafiq Limited (HRL), this state-of-the-art power plant has a generation capacity of 1,181 MW and commenced operations on May 20, 2018. The plant utilizes re-gasified

¹³ CPEC.gov.pk accessed on 27/12/2024.

¹⁴ **Source:** National Power Parks Management Company Limited
(<https://www.nppmcl.com/project/haveli-power-plant/>) accessed on 27/12/2024.

¹⁵ **Source:** National Power Parks Management Company Limited (NPPMCL)
(<https://www.nppmcl.com/project/haveli-power-plant/>) accessed on 27/12/2024.



liquefied natural gas (RLNG) as fuel, providing a reliable energy source to meet the growing electricity demands of the region and contributing to Punjab's economic development.

2.31.6 Chashma Nuclear Power Generating Station

The Chashma Nuclear Power Generating Station (CNPGS), situated near Chashma in the Mianwali District of Punjab, is a cornerstone of Pakistan's nuclear energy program. It comprises four operational units: C-1 (325 MW), operational since 2000; C-2 (325 MW), operational since 2011; C-3 (340 MW), operational since 2016; and C-4 (340 MW), operational since 2017. These units employ Pressurized Water Reactor (PWR) technology and operate under the safeguards of the International Atomic Energy Agency (IAEA). In December 2024, the Pakistan Atomic Energy Commission (PAEC) initiated the construction of the fifth unit, C-5, at the Chashma site. This new unit, once completed, will add 1,200 MW to the national grid, further strengthening Pakistan's energy security and supporting regional development.¹⁶

2.32 Health

Health makes a vital and foremost contribution to economic growth, as healthy population live longer and are more vibrant and productive. Efficient public health systems are crucial for providing care to the sick, and for instituting procedures that endorse wellness and prevent disease. Poor health contributes to poverty due to the catastrophic costs of illness and diminishes learning capacity during childhood and learning ability during adulthood.

The health sector of Pakistan is managed jointly by the Federal Ministry of Health and the Provincial Health Departments of the respective provinces. Constitutionally, health is a devolved subject under the 18th Constitutional Amendment (Eighteenth Amendment) Act, 2010, which was promulgated on April 19, 2010. Under these legislative amendments provinces have the right to run their health sector independently of the Federal Government, however, devolution of this key Ministry is yet not completed. The Ministry of National Health Services Regulation and Coordination is a government agency responsible for Pakistan's health system. Besides the Federal Health Department, each of the four provinces of Pakistan has its respective health department and Secretariat, headed by the Health Minister. The respective Departments are responsible for matters relating to controlling, managing, and administering medical services along with framing and enforcing health policies in line with that promulgated by the federal health Ministry.

2.32.1 Healthcare Delivery System

The health sector of Punjab has an extensive network of public and privately managed health infrastructure throughout the province. The Government is by far the major provider of hospital services in rural areas, and it is also the main provider of preventive care throughout the province.

The public health care delivery system is composed of three tiers:

¹⁶ Punjab Energy Department (energy.punjab.gov.pk) Accessed on 03/01/2025



i. Primary Healthcare

This is the first level of healthcare, where patients have their initial interaction with system that provides both curative and preventive healthcare services.

Punjab currently operates Basic Health Units (BHU) and Rural Health Centers (RHC) for providing basic health facilities at urban and rural areas, respectively. BHUs are located at Union Council level and serve catchment population of up to 25,000. Preventive, curative and referral services are provided at the BHUs level. The BHUs also provide clinical, logistical and managerial support to Lady Health Workers (LHWs). RHCs serve catchment population of up to 100,000 people. The Health Department currently has 2574 BHUs and 338 RHCs while it also operates 295 Maternal Child Health Care Centers (MCH) to provide health services to the vast population of the province. There are 1139 dispensaries and 37 T.B. clinics in the province (Punjab Development Statistics 2023)

ii. Secondary Healthcare

This is an intermediate level of healthcare facility which operates provision of technical, therapeutic and diagnostic services. It is the first referral level serving at the district and tehsil levels. Specialist consultation and hospital admissions fall into this category.

The Tehsil Head Quarters (THQs) and District Head Quarters (DHQs) Hospitals serve a population of 0.5 to 3 million people. Both these health care facilities provide basic and comprehensive emergency, obstetrics, preventive, curative, diagnostics, and in-patient services along with referral services to patients referred by BHUs, RHCs and Lady Health Workers Program. The Provincial Health Department aims to provide efficient delivery of key health services to the people of Punjab through hospitals situated in each district headquarter. In Punjab, DHQ hospitals are the fewest in number (26), constituting less than 1% of facilities. Low numbers of DHQ hospitals mean that the population has limited access to specialized secondary healthcare.¹⁷

iii. Tertiary Healthcare

The Tertiary Healthcare hospitals are for more specialized in-patient care. These hospitals provide specialized healthcare services usually to inpatients and on referrals from primary or secondary health professionals. There are 399 hospitals in the province. The Provincial Headquarter Lahore has a number of government hospitals namely; Jinnah Hospital Lahore, Lady Aitchison Hospital, Lahore General Hospital, Mayo Hospital, Punjab Institute of Cardiology, Shalamar Hospital and Sir Ganga Ram Hospital. Table 2.8 gives the number of basic health care institutions functioning in Punjab Province.

¹⁷ District Health Information System (DHIS) Punjab (<https://dhispb.com/> Accessed on 3/01/2025)



Table 2.8: Number of Health Institutions in Punjab Province

S.No.	Number of Health Institutions	2019	2020	2021	2022
1	Hospitals	389	390	391	399
2	Dispensaries	1201	1411	1411	1139
3	Rural Health Centers	319	358	378	338
4	T.B Clinic	17	15	36	37
5	Basic Health Units	2510	2587	2587	2574
6	Sub-Health Centers	221	186	193	168
7	M.C.H Centers	280	280	278	295
8	Trauma Centers	-	-	9	11

Source: Punjab Development Statistics-2023

2.32.2 Private Sector Engagement

Public Private Partnerships (PPP) in health care are becoming a useful instrument to advance healthcare provision, while improving service delivery across the landscape of the health sector. The Punjab government is keen to engage the private sector in healthcare and has already executed some interventions in this regard. Currently, the government is engaging with the private sector through various models. Some of the key partnerships include a) outsourcing management of health facilities b) outsourcing provision of non-clinical services c) health insurance through private sector d) representation on boards. Punjab government is engaging in outsourcing management of health facilities (BHUs, RHCs, THQ hospitals and DHQ hospitals) in five low performing districts (Chakwal, Jhang, Lodhran, Khanewal and Pakpattan) to external parties under a PPP management contract. The role of the private sector would be in maintenance of infrastructure, procurement of medical and non-medical supplies, enforcing protocols, hiring staff and to implement a referral system etc. The government would remain involved in monitoring performance and providing promised funds. The qualified firms would ensure maximum services under the agreement for management of contract for three years, which would be extendable on the basis of performance.

2.32.3 Access to Safe Drinking Water and Sanitation

Access to safe drinking water, sanitation and solid waste disposal is considered to be the fundamental right of every human being, and the duty of the state is to provide these facilities. Inadequate sanitation and non-availability of safe drinking water result not only in more sickness and death but also in higher health costs, lower worker productivity and lower school enrollment.

2.33 Education

Education lays the foundation of a developed and progressive society. It empowers individuals and societies to improve their skills, capabilities, and has a strong correlation with socio-economic development. In this regard, the development of a widely accessible quality and equitable education system is a critical requirement for human development. Article 25-A of the Constitution clearly reinforces the government's responsibility towards ensuring provision of quality education as a basic right.



A National Framework has been devised for localization of Sustainable Development Goals (SDGs) at district level to improve public social service delivery for implementation of the global agenda. Goal 4 of SDGs covers the education related framework to improve the education system; the federal government has decided to enhance working relationship with the provinces by providing all possible support to ensure successful implementation of all SDGs including those related to education.

The Federal Ministry of Education was devolved in 2010, following the 18th amendment, making education a provincial subject. However, planning, policy making and standard setting for education beyond Grade 12 remains with the federal government. The Punjab Higher Education Commission (PHEC) was established in 2014 to oversee the matters of higher education in the province.

2.33.1 Levels of Education

The formal schooling in Punjab like the rest of the Pakistan can be divided into different levels of education:

i. Primary Education

Primary education is the most important and crucial stage for a child's education. Primary education is for students aged 5-9 years and covers Grades 1-5. In Punjab a total of 32,157 schools were functional in 2021-22 with a total enrolment of 4071,064 and a teaching staff of 120,710 (Table 2.9).

Table 2.9: Number of Govt. Primary Schools for Boys and Girls in Punjab Province

S.No.	Province/Division	Total	Boys School	Girls School
1	Punjab	32,157	15,163	16,994
2	Bahawalpur	4,816	2,426	2,390
3	D.G. Khan	4,549	2,527	2,022
4	Faisalabad	3,475	1,603	1,872
5	Gujranwala	4,803	1,717	3,086
6	Lahore	2,717	1,481	1,236
7	Multan	2,962	1,249	1,713
8	Rawalpindi	2,986	1,266	1,720
9	Sargodha	3,721	1,770	1,951
10	Sahiwal	2,128	1,124	1,004

Source : Punjab Development Statistics-2023

ii. Middle Education

Middle school (also known as lower secondary) is for the children having ages between 10- 12 years and covers the three years' education from Grades 6 to 8. This stage prepares the students to enter upper secondary and post-secondary levels of education. During academic year 2021-22, a total of 7,177 middle schools (Table. 2.10) with an enrollment of 206,310 and 68,775 teaching staff were functional in the province.



Table 2.10: Number of Govt. Middle Schools for Boys and Girls in Punjab Province

S.No.	Province/Division	Total	Boys School	Girls School
1	Punjab	7,177	2,942	4,235
2	Bahawalpur	892	377	515
3	D.G. Khan	657	328	329
4	Faisalabad	933	358	575
5	Gujranwala	1,057	402	655
6	Lahore	722	280	442
7	Multan	904	363	541
8	Rawalpindi	692	269	423
9	Sargodha	738	353	385
10	Sahiwal	582	212	370

Source: Punjab Development Statistics-2023

iii. Secondary/High Level Education

High school (also known as upper secondary) covers Grades 9 and 10, the final two years of basic education for children having age between 13-14 years. It is the first important career deciding level where students can opt for either science or arts groups. During 2021-22, a total of 8023 high schools (Table 2.11) with 143448 teachers were functional in the province. The enrollment stood at 4873118.

Table 2.11: Number of Govt. High Schools for Boys and Girls in Punjab Province

S.No.	Division	Total	Boys School	Girls School
1	Punjab	8,023	4,140	3,883
2	Bahawalpur	731	413	318
3	D.G. Khan	587	344	243
4	Faisalabad	1,067	501	566
5	Gujranwala	1,359	624	735
6	Lahore	890	434	456
7	Multan	767	435	332
8	Rawalpindi	1,168	605	563
9	Sargodha	826	439	387
10	Sahiwal	628	345	283

Source: Punjab Development Statistics-2023

iv. Higher Secondary/Inter Colleges

Higher Secondary (also known as Intermediate schooling) covers Grades 11 and 12, and prepares students for tertiary education. A total of 1442 intermediate colleges were functional in Punjab in the year 2021-22 with enrollment 219323.



Table 2.12: Number of Arts & Science Higher Secondary School (Punjab Govt. and Private Organization) In Punjab Province

S.No.	Division	Total	Boys School	Girls School
1	Punjab	1,442	676	766
2	Bahawalpur	203	102	101
3	D.G. Khan	105	68	37
4	Faisalabad	214	89	125
5	Gujranwala	146	65	81
6	Lahore	184	75	109
7	Multan	188	87	101
8	Rawalpindi	185	82	103
9	Sargodha	115	59	56
10	Sahiwal	102	49	53

Source: Punjab Development Statistics-2023

v. Technical and Vocational Institutes

The technical and vocational education institutions in the public sector are managed by the Punjab Technical Education and Vocational Training Authority (PTEVTA). The Authority is an autonomous body running these institutions across Punjab. There are hundreds of Technical and Vocational Institutes in Punjab, with a significant number of students enrolled in these programs.¹⁸

vi. Higher Education

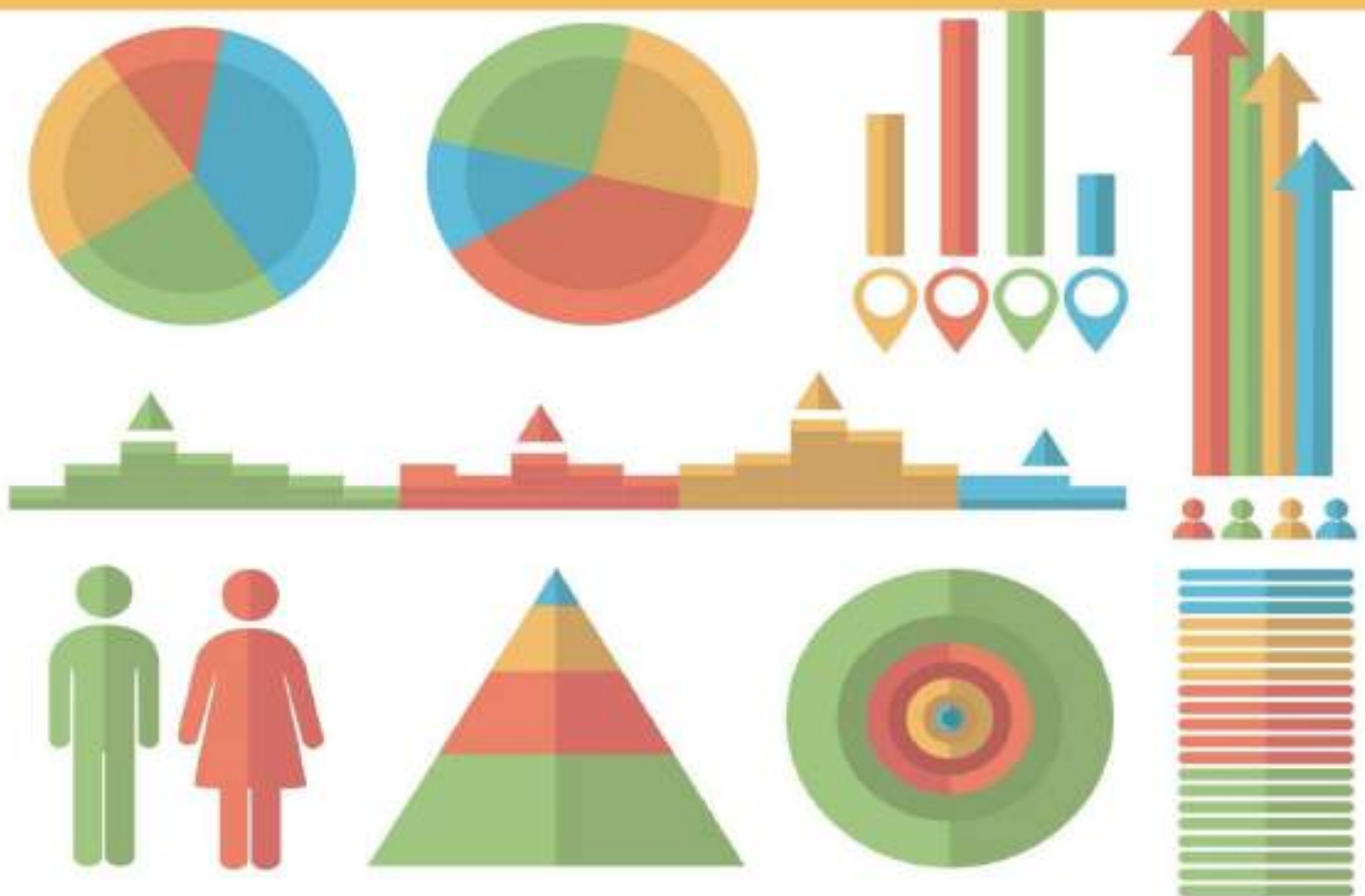
Of the overall enrollments in 262 universities and Degree Awarding Institutes (DAIs) Sector in Pakistan, Punjab's share is 37 % of the total. There are presently 55 public sector and 41 private universities /DAIs operational in Punjab.¹⁹

¹⁸ Technical Education and Vocational Training Authority Government of Punjab (<https://tevta.gop.pk/> Accessed on 3/01/2025)

¹⁹ Higher Education Commission (<https://www.hec.gov.pk/english/universities/hes/Pages/default.aspx> Accessed on 3/01/2025)

PART - III

DEMOGRAPHIC CHARACTERISTICS





PUNJAB



TOTAL
POPULATION

**127.6
MILLION**



MALE
51.26%



FEMALE
48.73%



AVERAGE ANNUAL
GROWTH RATE (%)

2.53%



AVERAGE
HOUSEHOLD SIZE

6.44



URBAN
41%



RURAL
59%



MARRIED
65.10%



NEVER MARRIED
29.99%

MOTHER TONGUE



URDU
7.18%

PUNJABI
67.00%

PUSHTO
1.87%

SINDHI
0.28%

BALOCHI
0.84%

SARAIKI
20.64%



POPULATION WITH AGE GROUPS

UNDER 5
14.38%

05 - 16
27.94%

15 - 29
26.10%

BELOW 18
44.23%

BELOW 40
77.37%

65 & ABOVE
4.00%

LITERACY **66%**



72.0%



60.0%

OUT OF SCHOOL 5-16 YEAR

9.6 MILLION (26.98%)



26%



28%



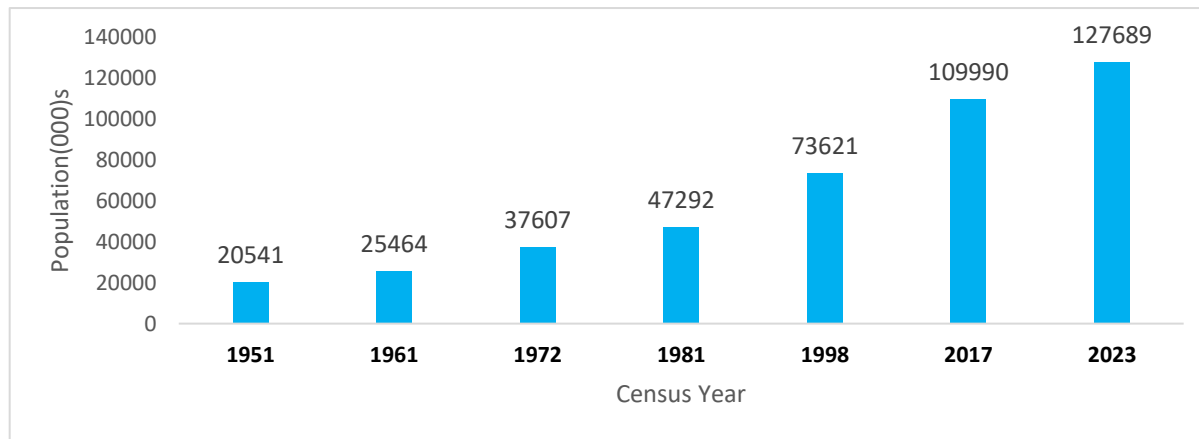
DEMOGRAPHIC CHARACTERISTICS

3.1 Population Size, Growth and its Distribution

3.1.1 Population Size and its Growth

The population of Punjab province according to the Census-2023 has been recorded as 127.7 million (127,688,922), showing increase of 17.70 million (16.90%) since Census-2017. Figure 3.1 illustrates that the population of Punjab province increased from 20.54 million in 1951 to 127.7 million in 2023, showing a rapid increase of about 107.46 million in the last 72 years. It is evident from Figure 3.1 that Punjab's population shows a steep rise in numbers since the year 1981 due to high growth rate experienced in the past with high population momentum. Punjab is the largest province in terms of population, therefore it greatly affects the size and growth of Pakistan's total population and its projected change in the future.

Figure 3.1: Population Size Since Census-1951



Looking at the trends in population growth since the first census of 1951, Table 3.1 shows that the intercensal increase has been the highest at 55.67% during 1981-1998 followed by 49.40% during 1998-2017, and 47.69% during the 1961-1972 period. This indicates that province has been experiencing a rapid increase in population from 1981-2017, the increase during 2017-2023 is 16.09% showing an overall cumulative increase in population in percentage term as 521.63% since Census-1951.

Table 3.1: Population and Intercensal Increase Since Census-1951

Description	1951	1961	1972	1981	1998	2017	2023
Population (in 000's)	20,541	25,464	37,607	47,292	73,621	109,990	127,689
Intercensal Increase (%)	-	23.97	47.69	25.75	55.67	49.40	16.09
Cumulative Increase (%)	-	23.97	83.08	130.23	258.41	435.47	521.63
Intercensal Average Annual Growth Rate (%)	-	2.2	3.4	2.7	2.6	2.1	2.53



The average annual growth rate has been observed as 2.53% during the intercensal period of 2017 to 2023, compared to 2.1% recorded between censuses held in 1998 and 2017. Figures 3.2 and 3.3 portray the average annual intercensal growth rates and an average per year increase since 1951, respectively.

Figure 3.2: Average Annual Growth Rate Since Census-1951

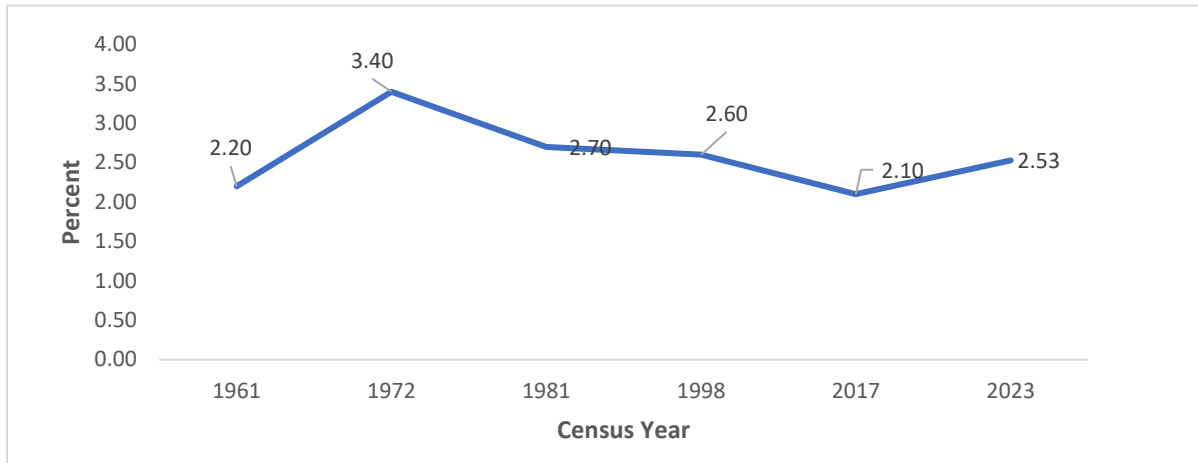
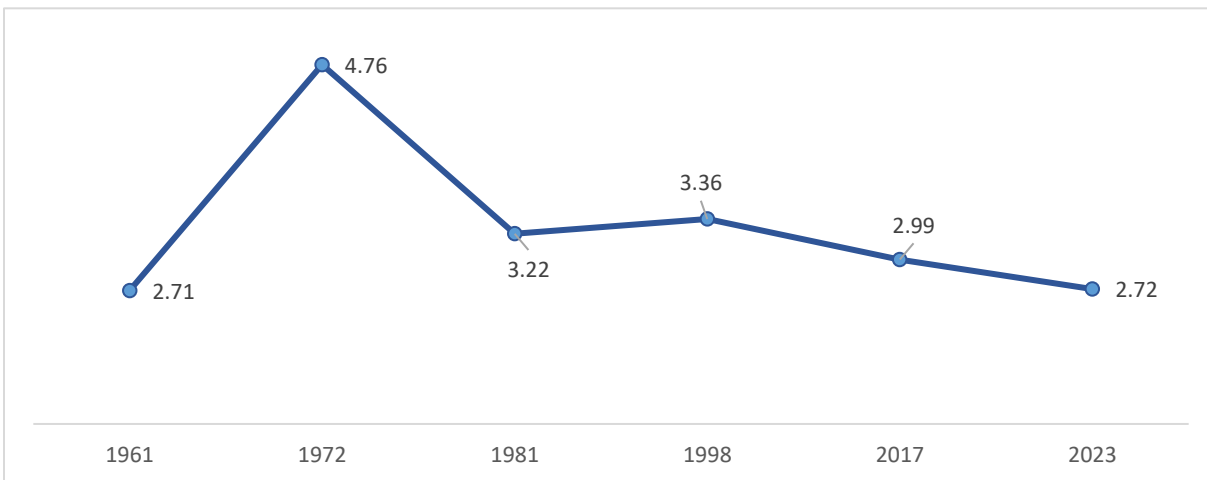


Figure 3.3: Average Per Year Increase



3.1.2 Population Distribution by Administrative Units

Punjab province is comprised of nine Divisions that are further divided into 36 Admin Districts. Lahore Division includes Lahore, Sheikhpura, Kasur and Nankana Sahib Districts and has the highest share of 17.83% to the total population of province. Gujranwala Division, comprising of six districts namely Gujranwala, Gujrat, Hafizabad, Mandi Bahauddin, Narowal and Sialkot, is the second largest division in terms of population size having share 14.71% of province total population. Sahiwal Division is the smallest division by population size with a share of 6.68% of province population. Table 3.2 provides a detailed breakdown on the distribution of population by divisions.



The average annual growth rate observed over the past two census i.e. census-2017 & 2023 varies for each administrative division of Punjab, with Rawalpindi Division having the lowest growth rate 2.21% whereas Lahore and Sargodha Division have the highest growth rate of 2.72%.

Table 3.2: Area, Population, Density, Urban Proportion, Average Household Size

Administrative Units	Area (Sq. Km)	Population		Population Density Per sq. Km	Urban Proportion	Avg. Household Size	Avg. Annual Growth Rate (%)
		Number	Percent				
Punjab	205,345	127,688,922	100.00	621.83	40.71	6.44	2.53
Bahawalpur Division	45,588	13,400,009	10.49	293.94	29.37	6.51	2.66
Dera Ghazi Khan Division	38,778	12,892,465	10.10	332.47	21.50	6.60	2.66
Faisalabad Division	17,918	16,228,526	12.71	905.71	38.51	6.43	2.27
Gujranwala Division	17,207	18,778,868	14.71	1091.35	40.47	6.77	2.58
Lahore Division	11,727	22,772,710	17.83	1941.90	70.80	6.51	2.72
Multan Division	15,211	14,085,102	11.03	925.98	30.70	6.18	2.33
Rawalpindi Division	22,254	11,406,496	8.93	512.56	50.94	6.10	2.21
Sahiwal Division	10,302	8,533,471	8.68	828.33	28.33	6.36	2.46
Sargodha Division	26,360	9,591,275	7.51	363.86	28.61	6.22	2.72

3.1.3 Average Household Size

The average household size according to Census-2023 has been observed as 6.44 persons indicating an increase from 6.38 persons recorded in Census-2017. The average household sizes in rural and urban areas as per the Census-2023 are 6.46 and 6.39 persons respectively. Among the administrative divisions, Gujranwala has the highest household size of 6.77 persons, followed by Dera Ghazi Khan division with 6.60 persons. The average household sizes in descending order pertaining to other divisions of the province are: Bahawalpur 6.51, Lahore 6.51, Faisalabad 6.43, Sahiwal 6.36, Sargodha 6.22, Multan 6.18, and Rawalpindi 6.10. An overall increase in the average household size has been witnessed in all the administrative divisions of the province except, DG Khan and Multan as compared to the Census-2017.

3.1.4 Population Density

The population density (average number of persons per square kilometer) is 621.83 persons as against 535.63 persons reported in Census-2017. Lahore Division is the most densely populated Division having a population density of 1,941.90 persons, followed by Gujranwala 1091.35 persons and Multan 925.98 persons. Bahawalpur is the least densely populated division with a population density of 293.94 persons (Figure 3.4).



Figure 3.4: Population Density of Province / Divisions, Census-2017 and 2023

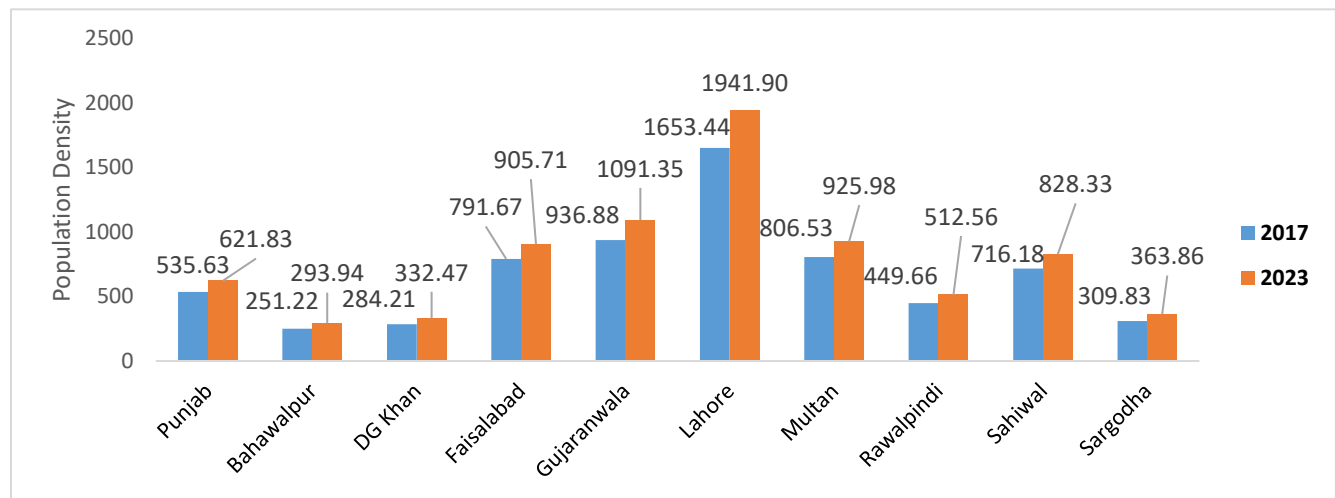
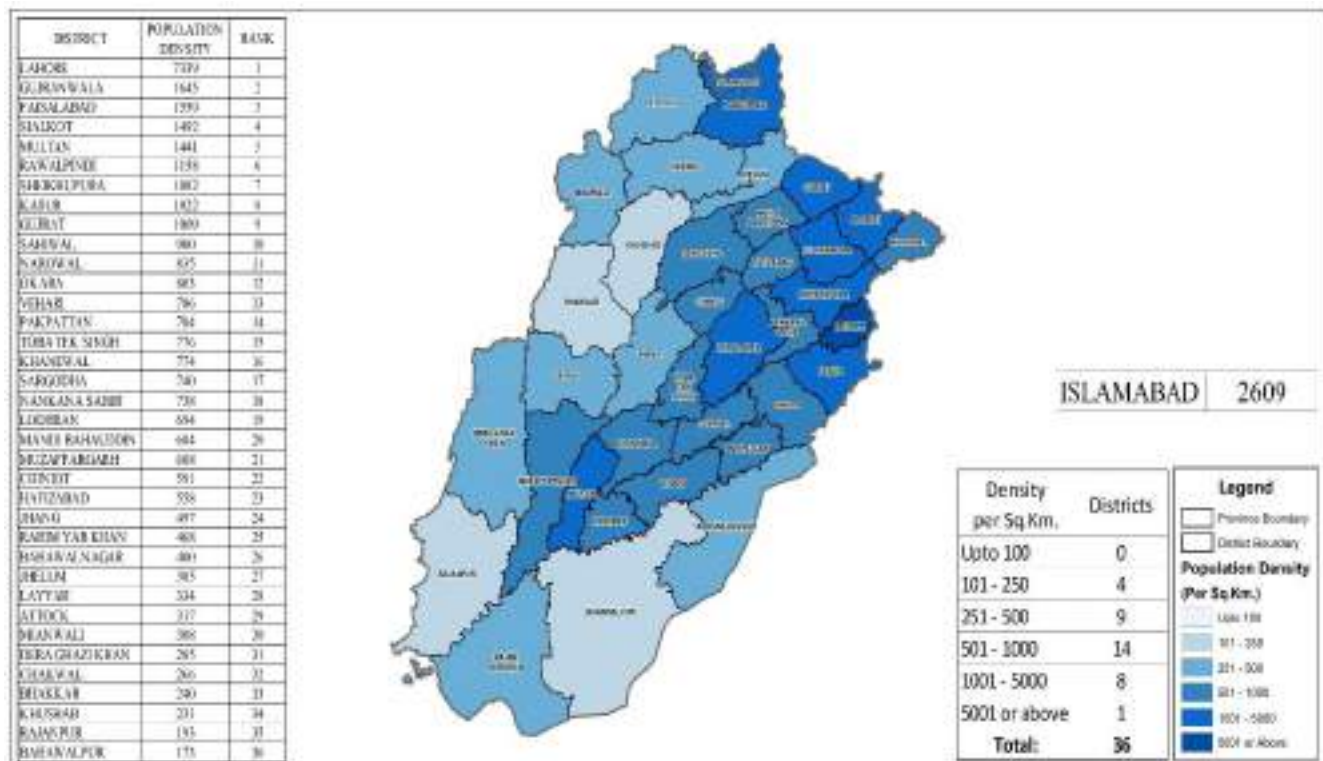


Figure 3.5 unveils the District-wise population density of the Province. Among all the District; Lahore District emerges with the highest population density as 7339.68 persons per sq km, followed by Gujranwala, Faisalabad, Sialkot and Multan. On the other hand, districts Bahawalpur with 173 and Rajanpur with 193 persons, Khushab with 231 persons, Bhakkar with 240 persons and Chakwal with 266 persons per sq km are lowest population density districts in Punjab.

Figure 3.5: District Wise Population Density Punjab, Census-2023





3.1.5 Rural-Urban Distribution of Population

According to the Census-2023, the rural population is recorded as 75,712,955 persons having 59.29% of the total Punjab's population. The rural population as a percentage of the total population has declined since the Census-2017 when it was recorded as 63.14% (69,442,450 individuals).



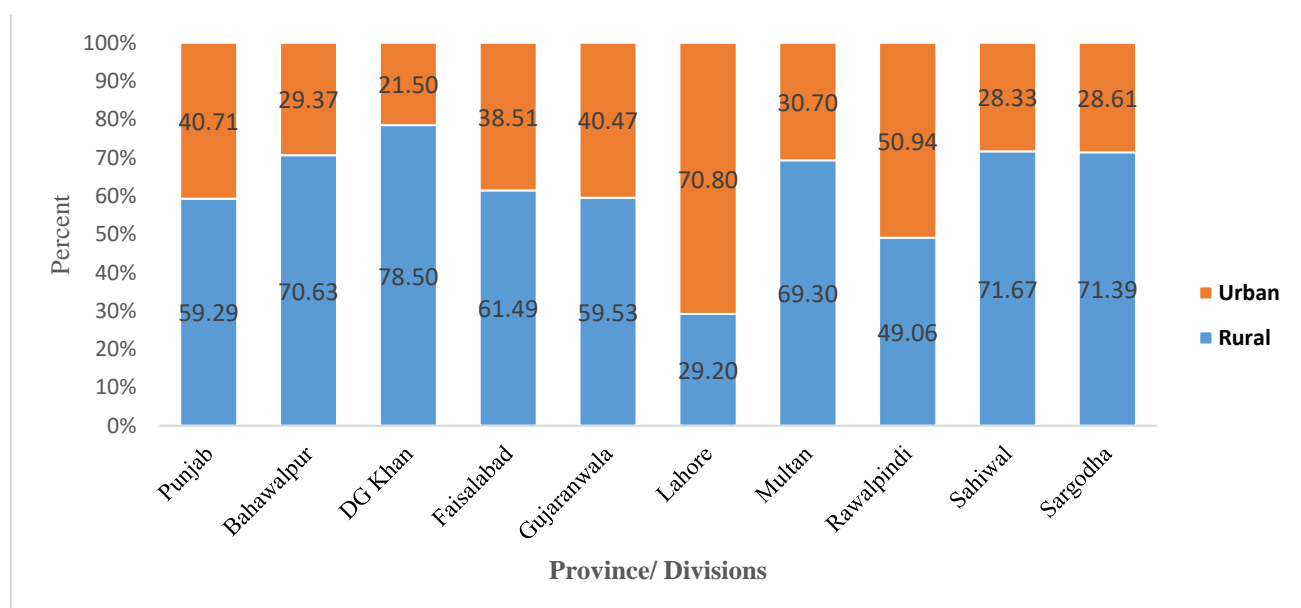
Rural
59.29%



Urban
40.71%

The urban population is recorded as 51,975,967 individuals in Census-2023, which is 40.71% of the province's total population which has increased as compared to the Census -2017 as 36.86%. Lahore Division is the most urbanized Divisions having population share of 70.80% as urban followed by Rawal pindi division with 50.94%, Gujranwala division with 40.97%, Faisalabad division with 38.51%, Multan Division 30.70%, Bahawalpur division with 29.37%, Sargodha division with 28.61%, Sahiwal division 28.31%, and the lowest urban population is in D.G.khan division with 21.50% while all other divisions are overwhelmingly rural in character (Figure 3.6).

Figure 3.6: Rural/Urban Percentage Population Distribution of Province / Divisions, Census-2023





The number of rural localities in the province have been reported as 24,700. While Rural localities with a population between 2000-4999 persons having the largest share of 7,386, followed by 5319 rural localities with a population between 1000-1999. Gujranwala division has the largest number of rural localities, amounting to 5,324 as per Census-2023. The number of rural localities classified by divisions and population size are listed in Table 3.3.

Table 3.3: Number of Rural Localities by Population Size of Province / Divisions, Census-2023

Administrative Units	Total Rural Localities	5,000 and Above	2,000 - 4,999	1,000- 1,999	500 - 999	200 -499	Less Than 200	Un Inhabited (Be-Chiragh)
Punjab Province	24,700	4,348	7,386	5,319	3,348	1,883	1,657	759
Bahawalpur Division	3,739	573	1,017	796	399	222	371	361
DG Khan Division	2,935	620	660	674	410	290	250	31
Faisalabad Division	2,360	657	1,012	305	165	125	83	13
Gujranwala Division	5,324	459	1,211	1,565	1,087	486	289	227
Lahore Division	1,685	397	463	287	209	134	168	27
Multan Division	2,338	615	990	348	182	119	75	9
Rawalpindi Division	2,452	274	640	593	434	248	195	68
Sahiwal Division	1,943	371	765	351	242	122	89	3
Sargodha Division	1,924	382	628	400	220	137	137	20

The number of urban localities* (Table 3.4) according to the Census-2023 is 287, increasing from 259 Urban localities notified in Census-2017. The highest number of Urban localities i.e., 92 are concentrated in population size ranging from 25,000 to 49,999 individuals, followed urban localities with a population size of 10,000 and over with a frequency of 89.

Table 3.4: Number of Urban Localities by Size of Population and Average Annual Growth Rate Since, Census-1961

Year	Total	Number of Urban Localities by Size				Urban Population		Avg. Annual Growth Rate of Urban Population
		Less than 25,000	25,000- 49,999	50,000 - 99,999	100,000 and over	Number	Percent	
1961	189	153	21	8	7	5,475,922	21.5	
1972	215	157	31	12	15	9,182,695	24.4	4.5
1981	215	126	45	24	20	13,051,646	27.6	4.2
1998	245	97	69	43	36	23,019,025	31.3	3.4
2017	255	52	76	65	62	40,547,205	36.9	3.0
2023	287	33	92	73	89	51,975,967	40.71	4.2

* In Census-2023, urban localities have been counted according to the Table -2 (Part-V) in the light of Notification issued by Provincial Local Government.



3.2 Distribution of Population by Sex, Age and Marital Status

3.2.1 Sex Ratio

The sex ratio is considered to be an important demographic indicator showing the number of males per hundred females in a population and is reflective of the gender balance in the province. It is greatly affected by sex differentials in mortality and migration as well as under or over enumeration of male and female population in the census / survey process. The sex ratio, in turn affects fertility, mortality, migration, labor force composition and other related factors.

According to the Census-2023, the total male and female populations recorded are 65,277,723 and 62,041,625 respectively, reflecting a sex ratio of 105.22, showing an increasing trend from 103.41 in Census-2017. The sex ratio is slightly higher in urban areas 106.67 compared to rural areas i.e. 104.17 in the province. This may be due to the migratory pattern of males to urban centers for work and education. (Table 3.5).

The sex ratio recorded at birth in the Census-2023 is 104.80 showing a decrease from the previous estimate of 105.24 in the Census-2017. The sex ratios recorded at birth in rural and urban areas are 105.26 and 104.01, respectively. The overall sex ratio for individuals below the age of 15 years is recorded as 104.73, whereas the sex ratio for the working-age population between the ages 15-64 years is recorded as 104.43. The sex ratio has witnessed an increase in the 65 years and above population from 110.18 in Census-2017 to 122.59 in Census-2023.

Table 3.5: Sex Ratio by selected Age Groups and Rural/Urban, Census-2017 and 2023

Age Groups	2017			2023		
	All Areas	Rural	Urban	All Areas	Rural	Urban
All Ages	103.41	102.15	105.59	105.22	104.17	106.76
At Birth	105.24	105.4	104.95	104.80	105.26	104.01
Less than 15 years	106.87	107.12	106.37	104.73	104.59	104.95
15-64 years	100.73	98.21	104.8	104.43	102.82	106.68
65+ years	110.18	109.43	111.8	122.59	119.43	128.18

3.2.2 Age Structure

The interaction of births, deaths, and migration has a considerable impact on the demographic behavior and emerging socio-economic characteristics of any society. However, like other developing countries, age reporting is not very accurate in Pakistan. This could be ascribed to illiteracy and ignorance about ages, and age heaping is often reported (tendency or digital preferences to report ages ending in 0 and 5 followed by even numbers).

According to the Census-2023, the population less than 15 years of age has a proportion of 38.21%, as compared to 38% in Census-2017. More than half population 57.78% lies in the working-



age group, i.e 15-64 years with slightly higher proportion in urban areas i.e. 60.21% than in rural areas which is 56.13%. The adult population above the age of 18 years is 55.77% of the total, which is slightly higher in urban areas i.e. 57.81% compared to rural areas 54.37%. The population below the age of five years constitutes 14.38, whereas infants (below the age of one year) make up 2.27%. The age group of 65 years and above represents 4% of the total population.

The province having a young age structure as that of total Pakistan shows a high dependency ratio (an age-population ratio of those typically not in the labor force - ages 0 to 14 years and above 65 years- and those typically in the labor force - ages 15 to 64) of 73.06% in Census-2023 The age dependency ratio is higher in rural areas i.e. 78.17% compared to urban areas as 66.08% reflective of larger proportions of young and dependent population

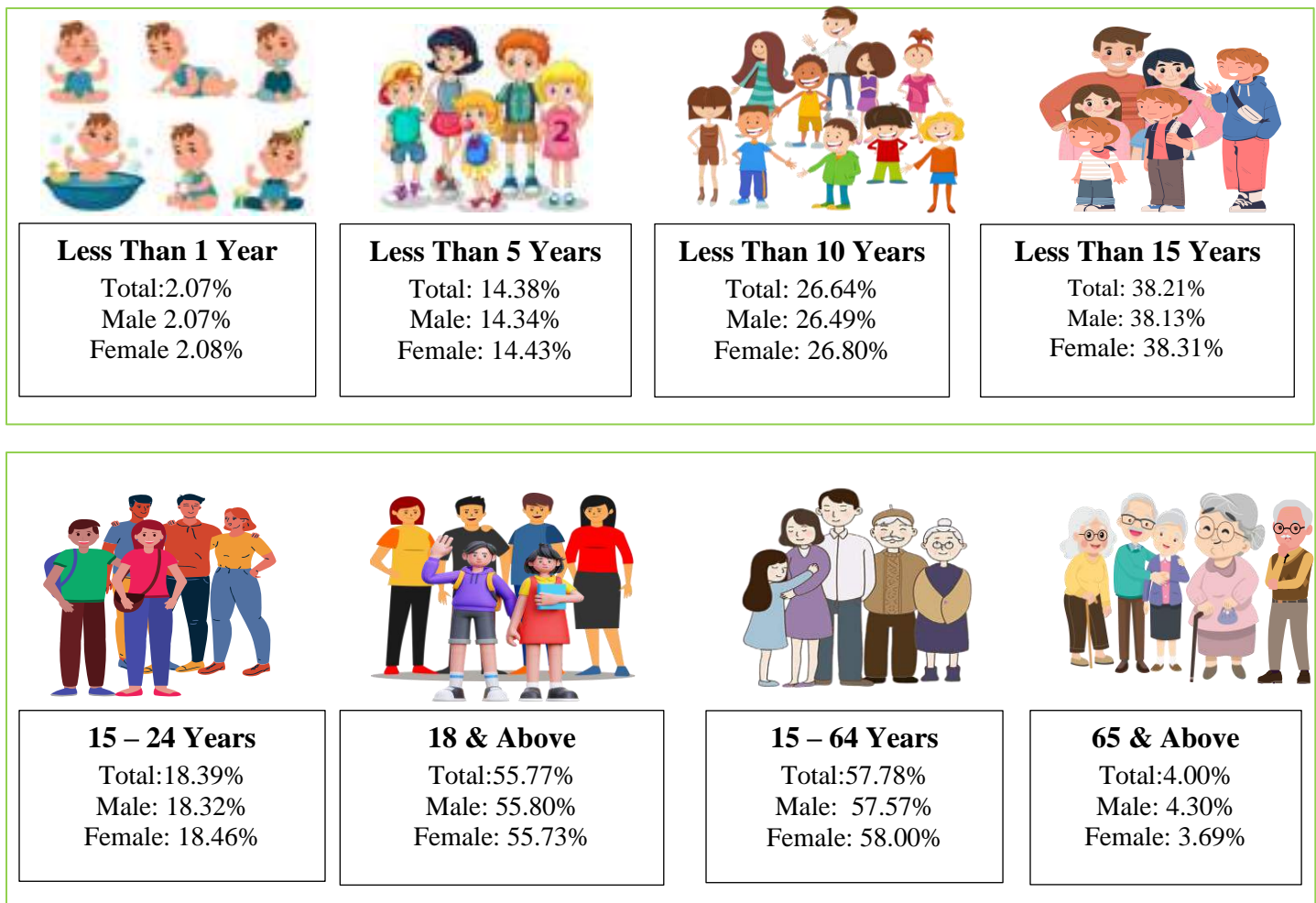


Table 3.6 presents the distribution of population by 5-year age intervals and sex. The male population comprises 51.27% of the total population, whereas the female population constitutes 48.73%. The age groups with the highest number of people are 00-04 and 05-09 years, with percentage shares of 14.38% and 12.26%, respectively. The percentage shares show a progressively decreasing pattern for higher age groups, indicating concentration of young population in the province.



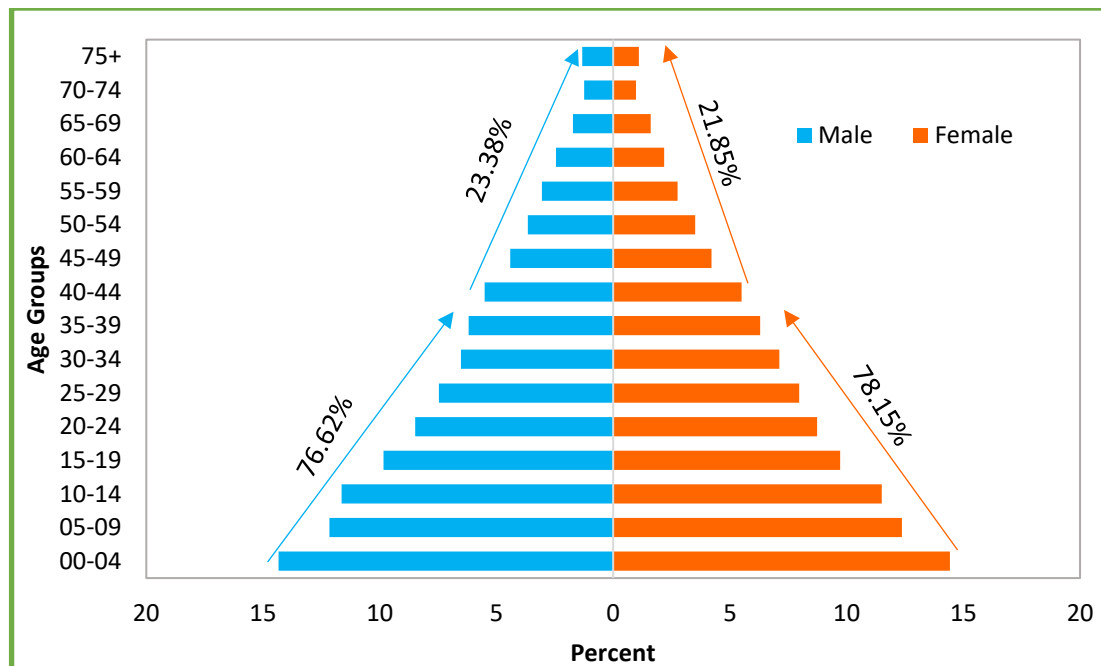
Table 3.6: Population of Province by Sex and Age Groups, Census-2023

Age Groups	Male	Female	Total*
All Ages	51.27	48.73	100
00-04	7.35	7.03	14.38
05-09	6.23	6.03	12.26
10-14	5.97	5.61	11.58
15-19	5.04	4.74	9.78
20-24	4.35	4.26	8.60
25-29	3.83	3.88	7.71
30-34	3.34	3.47	6.81
35-39	3.17	3.07	6.24
40-44	2.82	2.68	5.50
45-49	2.26	2.05	4.31
50-54	1.88	1.71	3.59
55-59	1.57	1.34	2.91
60-64	1.26	1.06	2.32
65-69	0.89	0.79	1.67
70-74	0.64	0.48	1.12
75+	0.68	0.53	1.21

*The transgender population is not included in the total population column.

Figures 3.7 portrays the percentage distribution of population for males and female's categories separately for five-year age intervals. This has been done to account for differences in age reporting of males and females. The graphical representation reflects the age and sex structure which can be represented as an expansive population pyramid with a large base, whose shape becomes narrower in the middle age groups until it becomes a thin peak at the top.

Figure 3.7: Population Distribution of Male and Female of the Province, Census-2023



3.2.3 Dependency Ratio

Table 3.7 shows that the overall age dependency ratio for all sexes is 73.06% as compared to 76.58% in Census 2017. The age dependency ratio for male is 73.70%, female is 72.41% and for transgender is 7.95%. the age dependency ratio is much higher in rural areas i.e. 78.17% compared to urban areas as 66.08%.

Table 3.7: Dependency Ratio of Province by Sex and Rural/Urban, Census-2023

Dependency Ratio	2017			2023		
	All Areas	Rural	Urban	All Areas	Rural	Urban
All Sexes	76.58	83.13	66.39	73.06	78.17	66.08
Male	78.95	86.87	67.02	73.70	79.32	66.16
Female	74.21	79.47	65.75	72.41	76.99	66.03
Transgender	11.25	15.93	7.63	7.95	8.89	7.67

3.2.4 Marital Status

All individuals having age 15 years and above enumerated in the Census-2023 have been classified according to their marital status, i.e married, never married, widowed, divorced and separated as shown in figure 3.8. The results show that out of the total population above 15 years of age, 29.99% are never married, 65.11% are married, 4.25% are widowed, 0.47% are divorced and 0.18% are separated. The percentage of never married males 34.07% is higher than never married females 25.67%. The distribution of marital status by age groups reveals that marriage is nearly universal as more than 91% of both males and females are married by ages 35-39 years.

Figure 3.8: Percentage Distribution of Population (15 Years and Above) by Marital Status and Age Groups, Census 2023

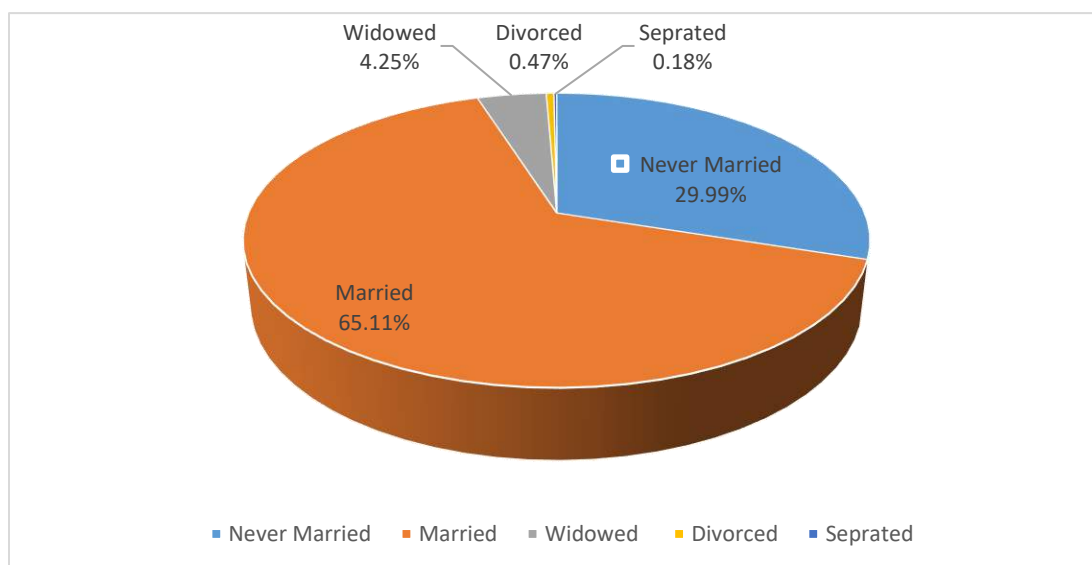
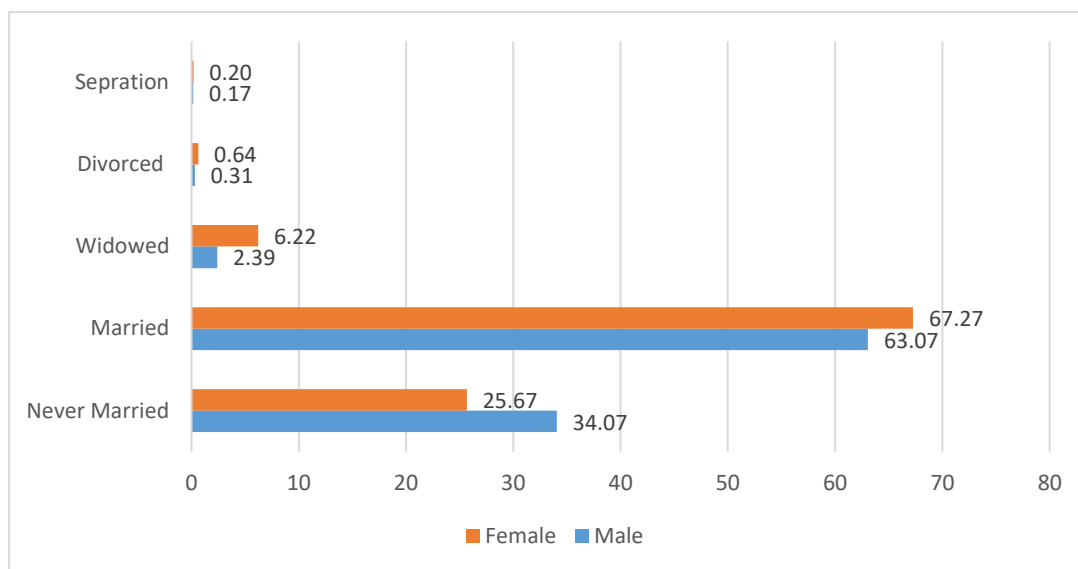


Figure 3.9 provides the percentage distribution of population by marital status. The percentage of never married males i.e. 34.07% is higher than never married females as 25.67%. Similarly, the percentage of married males i.e. 63.07% is lower than never married females as 67.27%.



Figure 3.9: Percentage of Male and Female Marital Status of Population (15 Years and Above), Census 2023

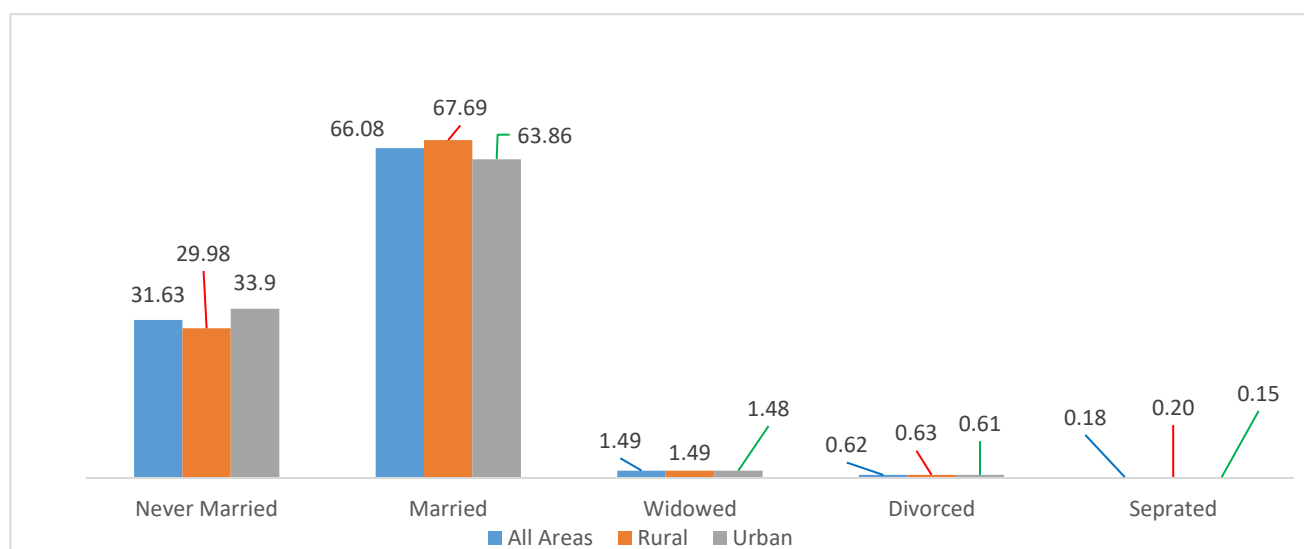


3.2.5 Females of Reproductive Age

Figure 3.10 shows that the total female population in the reproductive age group of 15-49 years is 30,737,395, which has a share of 49.54% of the total female population. The percentage of women falling in the reproductive age category is higher in urban areas i.e. 51.67% as compared to rural areas as 48.11%.

Among the reproductive age group, 31.63% of women are never married, 66.08% are married, 1.49% are widowed, 0.62% are divorced whereas 0.18% are separated. The married percentage are higher in rural and urban among all categories. The percentage of married women is higher in rural areas with 67.69% as compared to 63.86% in urban area. The percentage of divorced & separated female is higher in rural areas with 0.63% and 0.20% as compared to urban areas 0.61% and 0.15% respectively.

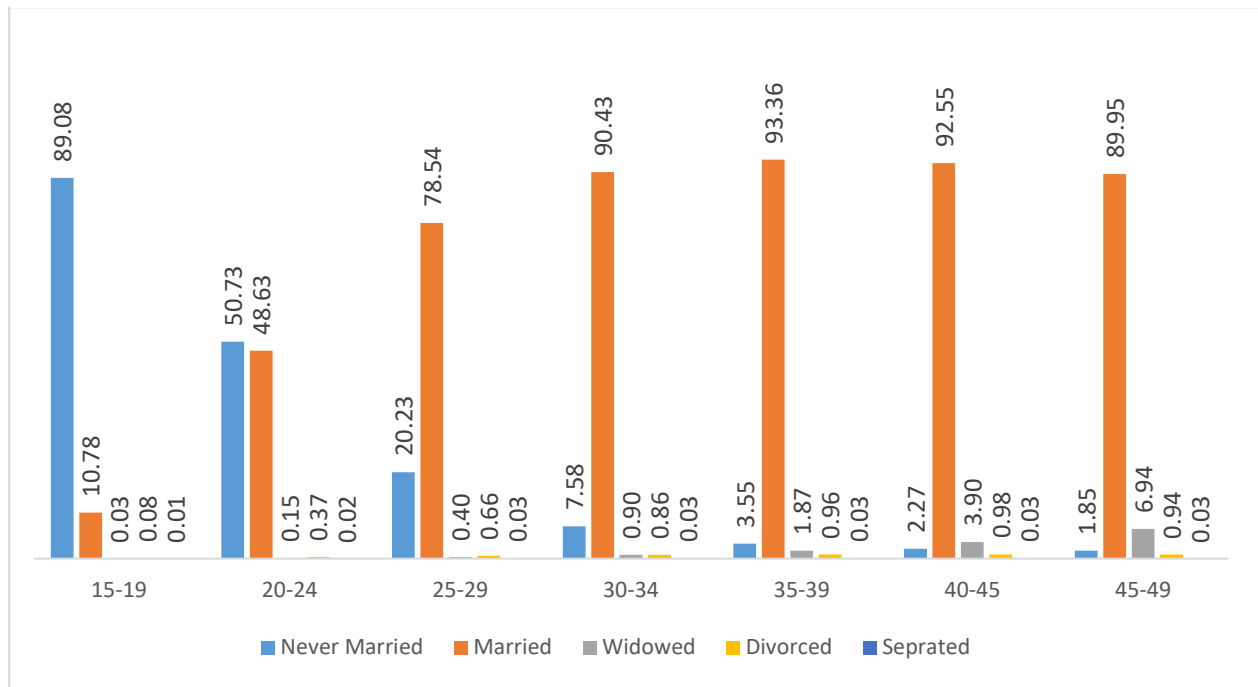
Figure 3.10: Percentage Distribution of Females of Reproductive Age (15-49 Years) by Marital Status and Rural/ Urban, Census-2023





The figure 3.11 shows the age wise distribution of females reproductive age from 15-49. It shows that the percentage of married female is highest in age bracket 35-39 years with 93.36% while the lowest percentage of married female is lowest in age bracket 15-19 years with 10.78%. The percentage of never married female is 89.08% in 15-19 age bracket whereas lowest in 1.85% in 45-49 age bracket. It shows the pattern from highest to lowest of age 15-49. The percentage of widowed female is highest in 45-49 age bracket with 6.94%.

Figure 3.11: Percentage Distribution of Females of Reproductive Age (15-49 Years) by Age Group and Marital Status, Census-2023



3.3 Distribution of Population by Religion and Mother Tongue

3.3.1 Population Distribution by Religion

The population is predominantly Muslim, with 97.75% of the total population of Punjab declaring Islam as their faith. The rural areas have share of 98.32% of Muslims population, whereas urban areas stand at 96.91%. The percentage of total Non-Muslim population of Punjab province recorded in Census-2023 is 2.25%. The largest amongst the minorities are Christians, who constitute 1.93% of the total population followed by Hindu representing 0.18%. Table 3.8 provides a comparison of population by religion over the census years 2017 and 2023, in rural and urban areas.

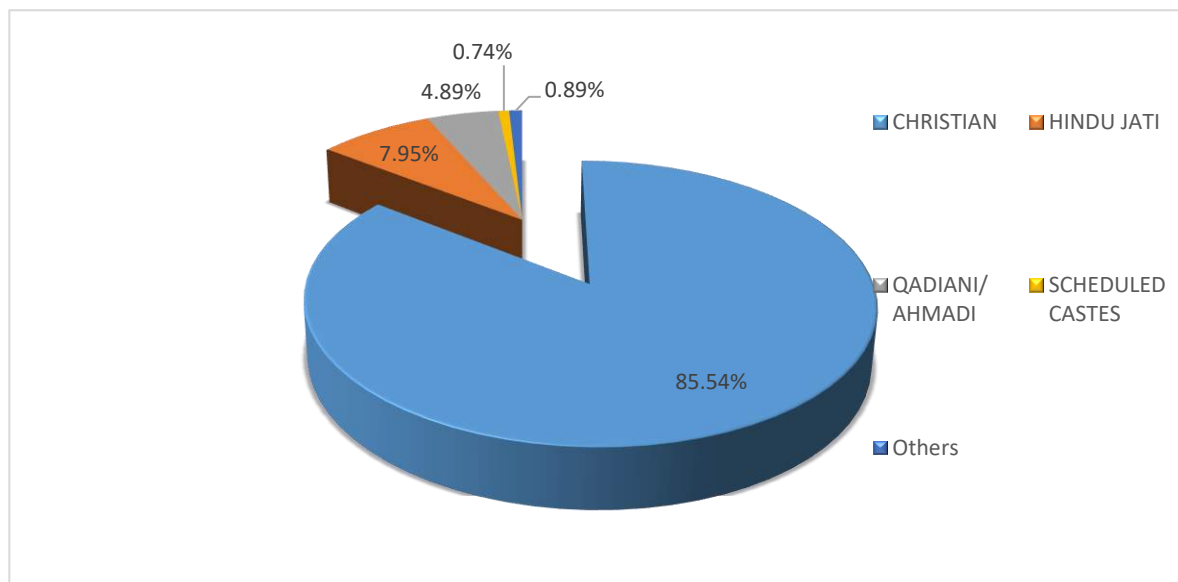


Table 3.8: Percentage of Population by Religion and Rural/Urban, Census-2017 and 2023

Religion	2017				2023			
	Number	Percent			Number	Percent		
	Total	All Areas	Rural	Urban	Total	All Areas	Rural	Urban
Muslim	107,541,602	97.78	98.4	96.72	124,462,897	97.75	98.32	96.91
Christian	2,063,063	1.87	1.22	2.98	2,458,924	1.93	1.32	2.82
Hindu	198,251	0.18	0.25	0.06	228,559	0.18	0.26	0.07
Ahmadi	158,021	0.14	0.1	0.22	140,512	0.11	0.07	0.17
Scheduled Castes	13,390	0.01	0.01	0.01	21,157	0.02	0.02	0.01
Others	15,328	0.01	0.01	0.01	21,256	0.02	0.02	0.01
Total	109,989,655	100	100	100	127,333,305	100	100	100

Figure 3.12 illustrate the percentage of Non-Muslims out of total Non-Muslims population. The total Non-Muslims population according to Census-2023 is 2.87 Million. Christian has the highest share among the total Non-Muslims population with a percentage of 85.45% while Scheduled Casts has the lowest share with a percentage of 0.74%. Hindu Jati, Qadiani /Ahmadi and Others contributes 7.95%, 4.89% and 0.89% respectively among the Non-Muslims population.

Figure 3.12: Percentage of Non-Muslims out of total Non-Muslim Population, Census-2023



3.3.2 Population Distribution by Mother Tongue

According to the Census-2023, Punjabi is the most widely spoken language in the province identified by 67% of the population as their mother tongue which has slightly decreased from Census-2017 with 69.67%. The second most spoken language is Saraiki 20.64% which remain same as from Census-2017 with 20.68% followed by Urdu 7.18% which has increased from Census-2017 with 4.87% as shown in (Table 3.9). The share of other languages spoken in Punjab are: Pushto 1.87%, Balochi 0.84%, Mewati 0.81%, Hindko 0.61%, Brahvi 0.03%, Kashmiri 0.12%, Punjabi 0.28%, Shina 0.01%, Balti 0.01%, Kohistani 0.02% and Others 0.60%.

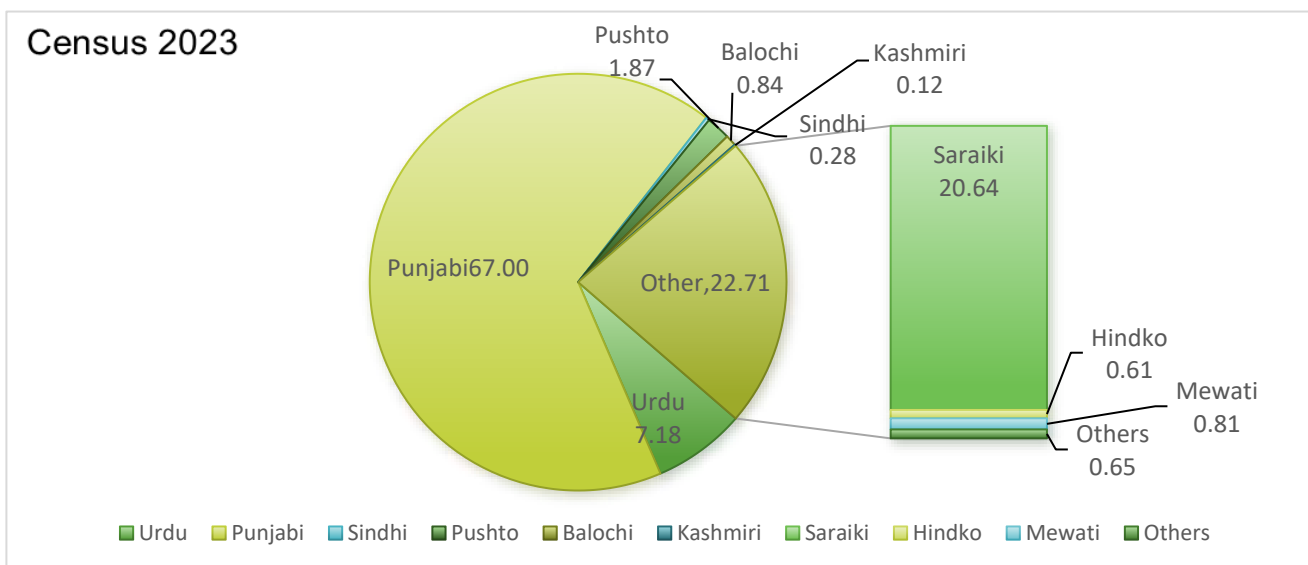


Table 3.9: Percentage of Population by Mother Tongue and Rural/Urban, Census-2017 and 2023

Language	2017				2023			
	Number	Percent			Number	Percent		
	Total	All Areas	Rural	Urban	Total	All Areas	Rural	Urban
Urdu	5,354,668	4.87	1.83	10.08	9,143,466	7.18	2.16	14.53
Punjabi	76,629,082	69.67	66.76	74.64	85,309,591	67.00	65.28	69.51
Punjabi	169,698	0.15	0.16	0.14	352,686	0.28	0.31	0.24
Pushto	2,178,102	1.98	1.53	2.75	2,387,378	1.87	1.40	2.57
Balochi	915,904	0.83	1.2	0.21	1,063,324	0.84	1.26	0.22
Kashmiri	184,032	0.17	0.12	0.24	155,088	0.12	0.07	0.20
Saraiki	22,748,542	20.68	26.69	10.4	26,282,637	20.64	27.14	11.13
Hindko	646,501	0.59	0.56	0.64	779,667	0.61	0.72	0.46
Mewati *	-	-	-	-	1,035,687	0.81	0.88	0.72
Others	1,130,655	1.03	1.12	0.88	823,781	0.65	0.80	0.42
Total	109,989,655	100	100	100	127,333,305	100.00	100.00	100.00

* These languages were included in the Census Form as separate options for the first time in Census-2023

Figure 3.13: Percentage of Population by Mother Tongue



3.4 Population by Nationality

A person's nationality is where they are a legal citizen, usually in the country where they were born. Nationality in international law can be called and understood as citizenship, or more generally as subject



or belonging to a sovereign state, and not as ethnicity. It is worth mentioning that after inclusive consultation, in census 2023 unlike 2017, non-nationals are further disaggregated into four categories, i.e. Afghani, Bengali, Chinese and others and separate numbers are collected for them.

Table 3.10 displays the Nationality of the Population for 2023 and 2017 census. In 2023, the total population of Punjab is around 127.33 million, with over 126.96 million being Pakistani citizens i.e. 99.71% are Pakistani nationals and about 0.37 million Non-National residents i.e. 0.29%.

Table 3.10: Percentage Distribution of Nationality by Region, Census-2017 and 2023

Area	2017		2023	
	Pakistani	Non-National	Pakistani	Non-National
All Areas	99.80	0.20	99.71	0.29
Rural	99.83	0.17	99.78	0.22
Urban	99.74	0.26	99.59	0.41
Nationality	109,768,552	221,103	126,959,469	373836

Table 3.11 shows that the majority of non-nationals in Census 2023 are Afghani's i.e. 310,832 while remaining are almost nominal with Bengali (1,224), Chinese (1,843) and Others (59,937) living in Punjab. The Afghani population living in Rural area (130,392) are less than Urban area (179,900). Similarly, Bengali, Chinese and Others Non-Pakistani's living in Urban areas are greater in number than those living in rural areas.

Table 3.11: Percentage Distribution of Nationality by Categories, Census-2017 and 2023

Area		Nationality Census -2023				
		Pakistani	Afghani	Bengali	Chinese	Others
All Areas	Total	126,959,469	310,832	1,224	1,843	59,937
	Percent	99.71	0.24	0.00	0.00	0.05
Rural	Total	75,456,716	130,932	615	1,103	31,072
	Percent	99.78	0.17	0.00	0.00	0.04
Urban	Total	51,502,753	179,900	609	740	28,865
	Percent	99.59	0.35	0.00	0.00	0.06

District Wise Analysis of Non-National

The data, categorized into different non-national population brackets ranging from 0.25% to 5.01% and above as depicted in figure 3.14.

- **Up to 0.25 Non-National:** Up to 0.25% Non-National population reside in 26 districts of Punjab that show a significant portion.
- **0.26 – 0.50 Non- National:** There are 3 districts falling in this bracket.
- **0.51 – 1.00 Non- National:** There are 4 districts falling in this bracket.
- **1.01 – 2.00 Non- National:** There is only 1 district falling in this bracket.
- **2.01 - 5.00 Non- National:** 2 district Fall in this Bracket.

- **5.01 or above Non- National:** There is No districts in this bracket.

Figure 3.14: District wise Non-National Punjab, Census-2023



The population of non-national in Punjab province is highest in Attock with 3.26% and lowest in Okara district with 0.03% population. Three districts from Rawalpindi Division with highest percentage having higher Non- National nationals in Census-2023 are Attock, Chakwal and Rawalpindi with population i.e. 3.26%, 2.36%, and 1.18% respectively.

3.5 Population with Disability

In the previous census i.e. 1981, 1998, the question for gauging the exact nature of disability was asked in the long form which was enumerated on the sample based. However, this information cannot be collected in census 2017 due to dropping of sampled enumeration based on Long form. During preparations of Census 2023, a technical committee was constituted for designing of questionnaire by Census Advisory committee, comprising of renowned demographers and experts. They had thoughtfully considered about the inclusion of questions regarding disability. After detailed deliberations with all the stakeholders, the including Community Based Inclusive Development Network (CBIDN), the technical committee recommended to include set of questions designed by Washington Group on Disability Statistics (WG).

Disability statistics are measured through proxy as per guidelines provided by Washington Group of Disability Statistics (WG), by combining two options i.e. a lot of difficulty to perform the activity and cannot perform the activity at all. The total number of disabled population in Punjab Province according to the Census-2023 is recorded as 4,487,038 out of which 55.47% are male, 44.53% female.



Table 3.12 shows that disabled persons constitute only 3.52% of the province’s population. The disability rate for male (disabled male as a percentage of total male population) is 3.81% and for the female (disabled female as a percentage of total female population) is 3.22%. Out of the total disabled population, 62.13% are recorded in rural areas where as 37.87% are residing in urban areas.

Table 3.12: Disabled Population and Percentage Distribution by Sex and Rural/Urban, Census-2023

Disabled Population by Sex and Rural/Urban			
Description	Total Disabled Population	Male	Female
Total	4,487,038 (100)	2,488,776 (55.47%)	1,998,262 (44.53%)
Rural	2,787,838 (100)	1,533,173 (34.17%)	1,254,657 (27.96%)
Urban	1,699,208 (100)	955,603 (21.30%)	743,605 (16.57%)
Disability Percent out of total Population			
Total	3.52	3.81	3.22
Rural	2.19	2.35	2.02
Urban	1.33	1.46	1.20

3.5.1 Population with Functional Limitation

These questions are designed to ascertain functional limitations in any of the activities like seeing, hearing, walking/climbing, in communication or remembering/concentration or wash-ing/dressing/holding/writing etc. It is also pertinent to mention that the same set of questions has been used in recent censuses conducted in the majority of countries including UK, Maldives etc. It is pertinent to mention here that these questions only ascertain the severity of the issue to perform the said activity and cannot exactly gauge whether the people are disabled or otherwise.

Functional limitation is a measure of an individual's ability to perform daily activities. It is assessed based on the following criteria:

- Less difficulty to perform the activity:** Some individuals may experience minor difficulties in carrying out certain tasks.
- A lot of difficulty to perform the activity:** Others may face significant challenges and require assistance or adaptations to complete their daily functions.
- Cannot perform the activity at all:** Some individuals may be unable to perform specific activities independently.

According to the Census-2023, the total population with functional limitations in Punjab Province is recorded as 13,507,697. Out of this population, 52.88% are male and 47.12% are female.

Table 3.13 shows that persons with functional limitation make up only 10.61% of the total population in Punjab Province. This includes both males and females, with 10.94% of males (functional limitations in male as a percentage of total male population) and 10.26% of females (functional



limitations in female as a percentage of total female population) experiencing functional limitations. Furthermore, out of the total population with functional limitations, 59.73% reside in rural areas, while 40.27% reside in urban areas. This distribution emphasizes the importance of considering both rural and urban contexts when addressing the needs of individuals with functional limitations. It is essential to recognize that functional limitations can vary in severity and impact an individual's ability to perform daily activities. Some individuals may face fewer difficulties in performing activities, while others may encounter significant challenges or be unable to perform certain activities altogether.

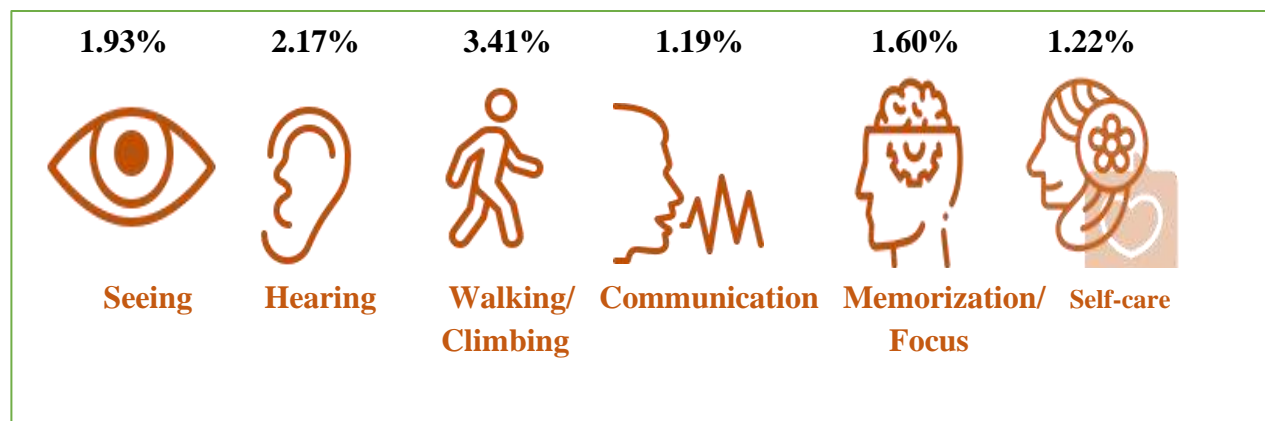
Table 3.13: Population and Percentage Distribution of Functional Limitation by Sex and Rural/Urban, Census-2023

Functional Limitation by Sex and Rural/Urban			
Description	Total *Population by Functional Limitation	Male	Female
Total	13,507,697	7,142,499	6,365,198
Rural	8,068,689	4,248,466	3,820,523
Urban	5,439,008	2,894,333	2,544,675
Functional Limitation percent			
Total	10.61	10.94	10.26
Rural	6.34	6.51	6.16
Urban	4.27	4.43	4.10

**Note: It is possible that an individual can face more than one difficulty in performing his daily functions.*

3.5.2 Population with Functional Limitation by categories

In table 3.14, it is evident that in Punjab province, there is a total population of 4,337,871 individuals who face difficulty in walking or climbing. This functional limitation is one of the most commonly reported challenges in performing daily functions. Other notable limitations include hearing impairments affecting 2,759,390 individuals, visual impairments affecting 2,463,045 individuals, communication difficulties affecting 1,511,716 individuals, and issues with memorization or focus affecting 2,037,298 individuals. Additionally, self-care limitations affect 1,548,468 individuals.



It is important to note that across all these categories, the male population tends to have a higher number of individuals with limitations compared to the female population. Specifically, in the category of



difficulty in walking or climbing, the percentage of males facing this challenge out of total male population is 3.57%. For females, the percentage of those facing difficulty in walking or climbing in relation to the total female population is 3.24%.

Table 3.14: Population and Percentage Distribution of Functional Limitation with Categories by Sex and Rural/Urban, Census-2023

Functional Limitation by Category*			
Category	Total Population by Functional Limitation	Male	Female
*Walking/ climbing	4,337,871	2,329,378	2,008,493
Hearing	2,759,390	1,452,948	1,306,442
Seeing	2,463,045	1,301,675	1,161,370
Memorization/Focus	2,037,298	1,092,030	945,030
Self-care etc	1,548,468	810,486	737,982
Communication	1,511,716	830,546	681,170
Functional Limitation Percent			
Walking/ Climbing	3.41	3.57	3.24
Hearing	2.17	2.23	2.11
Seeing	1.93	1.99	1.87
Memorization/Focus	1.60	1.67	1.52
Self-care etc	1.22	1.24	1.19
Communication	1.19	1.27	1.10

* Note: Sum of percentage of all categories is not equal to 100% as it is possible that an individual can face more than one difficulty in performing his daily functions.

3.6 Education

3.6.1 Literacy

Literacy is an important indicator of education and it has significant impact on development and socio-economic growth of the country. It is fundamental to development as it drives economic growth, improves health, enhances educational opportunities, and fosters a more engaged and equitable society.

A person who can read and write with understanding in any language and make simple calculation is treated as literate. According to Census-2023, the percentage of literacy among the population of age 10 years and above is recorded as 66.25% (Table 3.15). This percentage of literacy is higher for males 71.98% than for females 60.19% and for transgender 41.30%. Moreover, the literacy has shown an increase from Census-2017 to Census 2023, wherein it was recorded as 64.01% in Census 2017 and 66.25% in Census 2023.

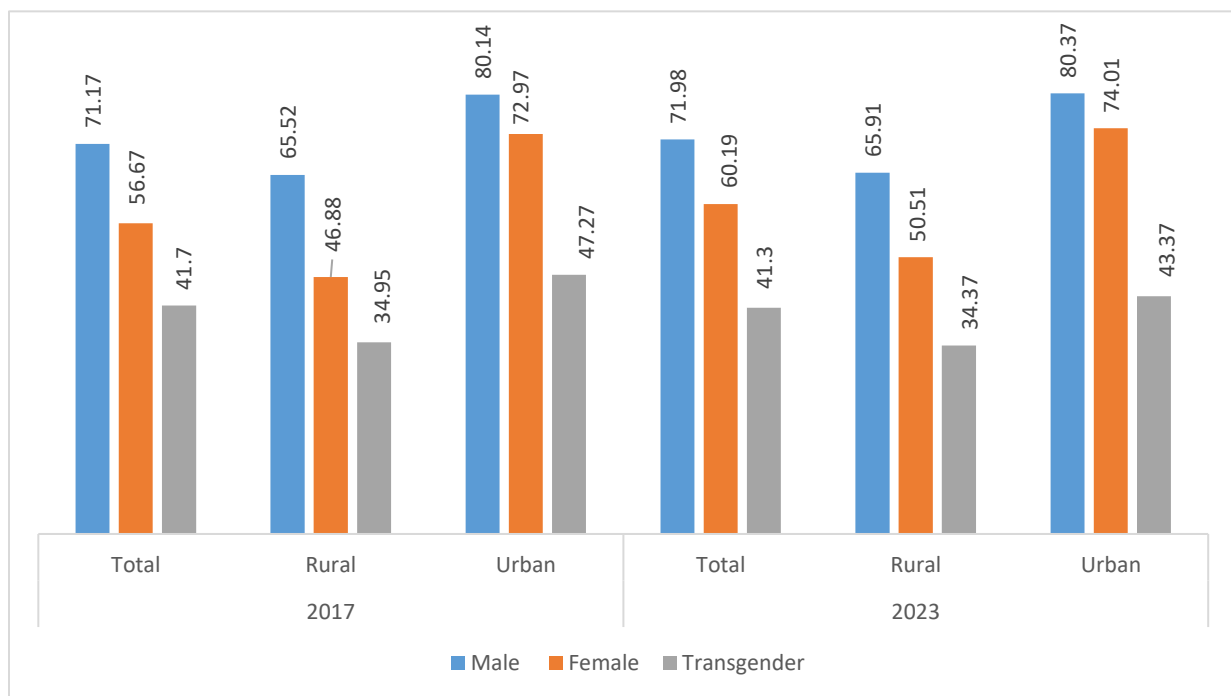


Table 3.15: Percentage of Literacy Rate by Sex and Rural/Urban, Census-2017 and 2023

	2017				2023			
Area	All Sexes	Male	Female	Trans-Gender	All Sexes	Male	Female	Trans-Gender
All Areas	64.01	71.17	56.67	41.70	66.25	71.98	60.19	41.30
Rural	56.23	65.52	46.88	34.95	58.37	65.91	50.51	34.37
Urban	76.65	80.14	72.97	47.27	77.30	80.37	74.01	43.37
Total Literate Population	51,692,022	29,093,53	22,593,333	5,186	61,882,72	34,541,132	27,335,806	5,764

Figures 3.15 illustrate the comparison between male and female percentage of literacy according to Census results of census 2017 and 2023. The results reveal that females' literacy has increased from 56.67% in Census-2017 to 60.19% observed in Census-2023, showing a better progress than males whose literacy increased from 71.17% in Census-2017 to 71.98% in Census-2023.

Figure 3.15 : Percentage of Literacy Rate by Sex and Rural/Urban: Census-2017 & 2023

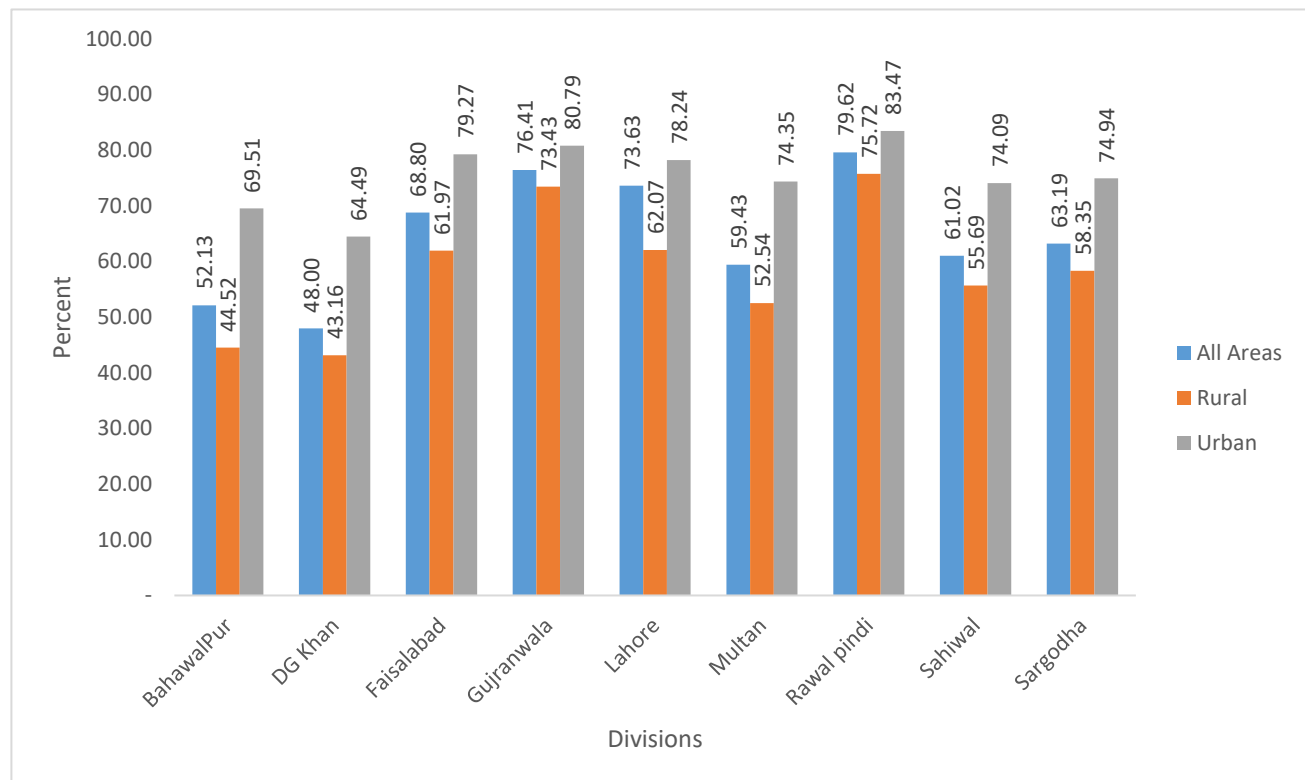


Analyzing by gender and region, it is revealed that there is stark difference in urban rural in terms of male & female literacy. The gender gap in urban areas is around 7 percentage points while the same in rural areas is 15 percentage points. This implies there is strong need to work in rural areas of province for educational infrastructure along with emphases in quality for increasing literacy in rural areas.



Furthermore, the percentage of literacy by administrative divisions in Punjab province are shown in Figure 3.16 indicating that literacy in Rawalpindi Division with 79.62% is the highest among all the divisions of the province. Among the rest of the divisions, Lahore division has the highest literacy percentage with 73.63%, Faisalabad division with 68.80%, Sargodha Division with 63.19%, Sahiwal Division with 61.02%, Multan Division with 59.43%, Bahawalpur division with 52.13% and D.G.Khan division has the lowest with 48%. This figure also shows differences in rural and urban areas in all divisions, the largest gender gap in literacy is in Multan division with 21.81 percentage points followed by Sargodha division with 16.59 percentage points and the smallest difference in rural and urban literacy is in Gujranwala Division with 7.36 percentage points.

Figure 3.16 : Literacy Rates by Administrative Divisions and Rural/Urban Areas, Census-2023



District Wise Analysis of Literacy

A comprehensive analysis of district-level literacy in Punjab aims to identify disparities, understand regional educational challenges, and inform policy decisions to improve literacy outcomes across districts. The overall percentage across the 36 districts is 66.25%. 14 districts have literacy higher than 66.25%. Whereas 22 districts fall below the literacy of 66.25%. This threshold serves as a benchmark to assess the distribution of literacy in the districts

The Percentages of literacy across the districts reveal a diverse distribution. The data, categorized into different literacy brackets, is as follows:

- **Up to 50.0% Literacy:** There are 4 districts namely Rajanpur, D.G Khan, Rahim Yar Khan and Muzaffargarh i.e., a significant portion of districts have percentages of literacy within this range, reflecting moderate levels of literacy.



- Rawalpindi Division leads in literacy, while Dera Ghazi Khan faced low literacy among nine divisions of Punjab as most of the district of Punjab literacy ranged from 60% to 80%. The highest percentage of literacy among 36 Districts of Punjab is of District Rawalpindi (83.2%) followed by District Gujrat (81.4%) and District Jhelum, (80.7%).

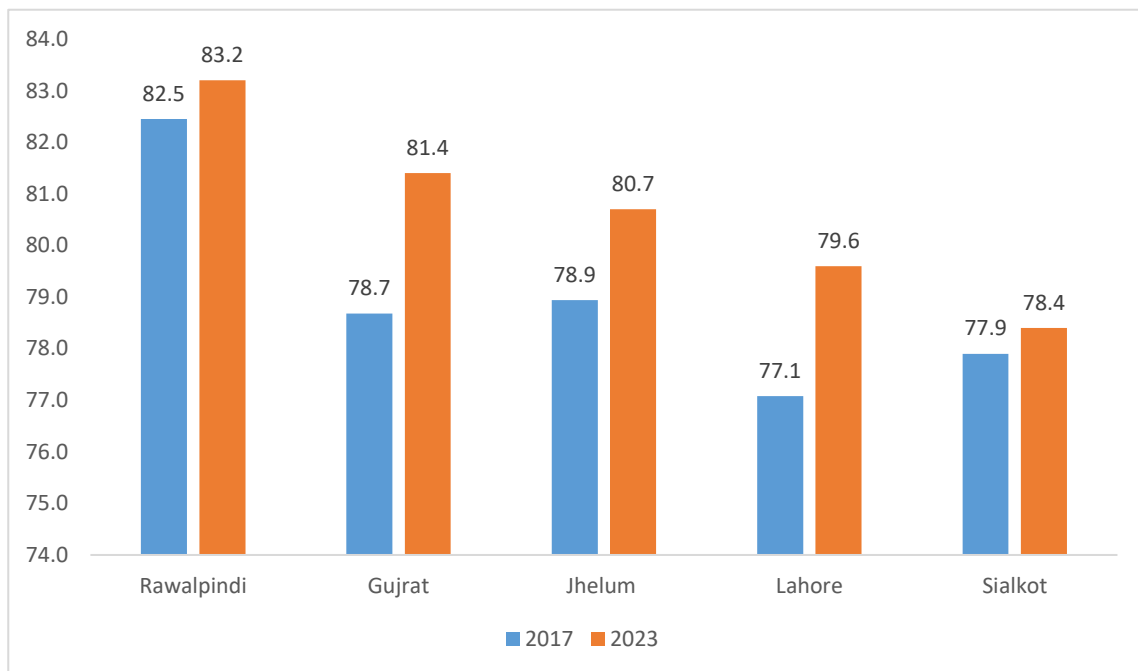
District	Urban Rate	Rural
ISLAMABAD	88.2	1
RAWALPINDI	85.4	2
ISLAMABAD	85.7	3
ISLAMABAD	79.8	4
ISLAMABAD	78.4	5
ISLAMABAD	77.8	6
ISLAMABAD	76.8	7
ISLAMABAD	75.8	8
ISLAMABAD	75.4	9
ISLAMABAD	71.4	10
ISLAMABAD	70.8	11
ISLAMABAD	70.2	12
ISLAMABAD	68.8	13
ISLAMABAD	66.7	14
ISLAMABAD	65.8	15
ISLAMABAD	65.8	16
ISLAMABAD	65.1	17
ISLAMABAD	62.8	18
ISLAMABAD	62.8	19
ISLAMABAD	62.1	20
ISLAMABAD	61.8	21
ISLAMABAD	61.8	22
ISLAMABAD	61.8	23
ISLAMABAD	60.8	24
ISLAMABAD	59.1	25
ISLAMABAD	59.1	26
ISLAMABAD	58.1	27
ISLAMABAD	57.8	28
ISLAMABAD	56.7	29
ISLAMABAD	56.1	30
ISLAMABAD	55.4	31
ISLAMABAD	55.1	32
ISLAMABAD	54.8	33
ISLAMABAD	54.8	34
ISLAMABAD	54.8	35
ISLAMABAD	54.8	36
ISLAMABAD	54.8	37
ISLAMABAD	54.8	38
ISLAMABAD	54.8	39
ISLAMABAD	54.8	40
ISLAMABAD	54.8	41
ISLAMABAD	54.8	42
ISLAMABAD	54.8	43
ISLAMABAD	54.8	44
ISLAMABAD	54.8	45
ISLAMABAD	54.8	46
ISLAMABAD	54.8	47
ISLAMABAD	54.8	48
ISLAMABAD	54.8	49
ISLAMABAD	54.8	50
ISLAMABAD	54.8	51
ISLAMABAD	54.8	52
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ISLAMABAD	54.8	61
ISLAMABAD	54.8	62
ISLAMABAD	54.8	63
ISLAMABAD	54.8	64
ISLAMABAD	54.8	65
ISLAMABAD	54.8	66
ISLAMABAD	54.8	67
ISLAMABAD	54.8	68
ISLAMABAD	54.8	69
ISLAMABAD	54.8	70
ISLAMABAD	54.8	71
ISLAMABAD	54.8	72
ISLAMABAD	54.8	73
ISLAMABAD	54.8	74
ISLAMABAD	54.8	75
ISLAMABAD	54.8	76
ISLAMABAD	54.8	77
ISLAMABAD	54.8	78
ISLAMABAD	54.8	79
ISLAMABAD	54.8	80
ISLAMABAD	54.8	81
ISLAMABAD	54.8	82
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ISLAMABAD	54.8	94
ISLAMABAD	54.8	95
ISLAMABAD	54.8	96
ISLAMABAD	54.8	97
ISLAMABAD	54.8	98
ISLAMABAD	54.8	99
ISLAMABAD	54.8	100

Population & Housing Census-2023



The top five districts of Punjab Province having higher percentages of literacy in Census-2023 are Rawalpindi, Gujrat, Jhelum, Lahore and Sialkot with literacy i.e. 83.2%, 81.4%, 80.7%, 79.6% and 78.4% higher than percentages of literacy in Census-2017 i.e. 82.45%, 78.68%, 78.94%, 77.08% and 77.92% respectively depicting that the literacy level is higher in all five districts. The district wise literacy comparison is also illustrated in the Figure 3.18 where Punjab Province bars are shown in green color. Districts bars shown in descending order with the respect to literacy percentages. The Figure below illustrates the comparative analysis of top five ranked districts with the previous Census.

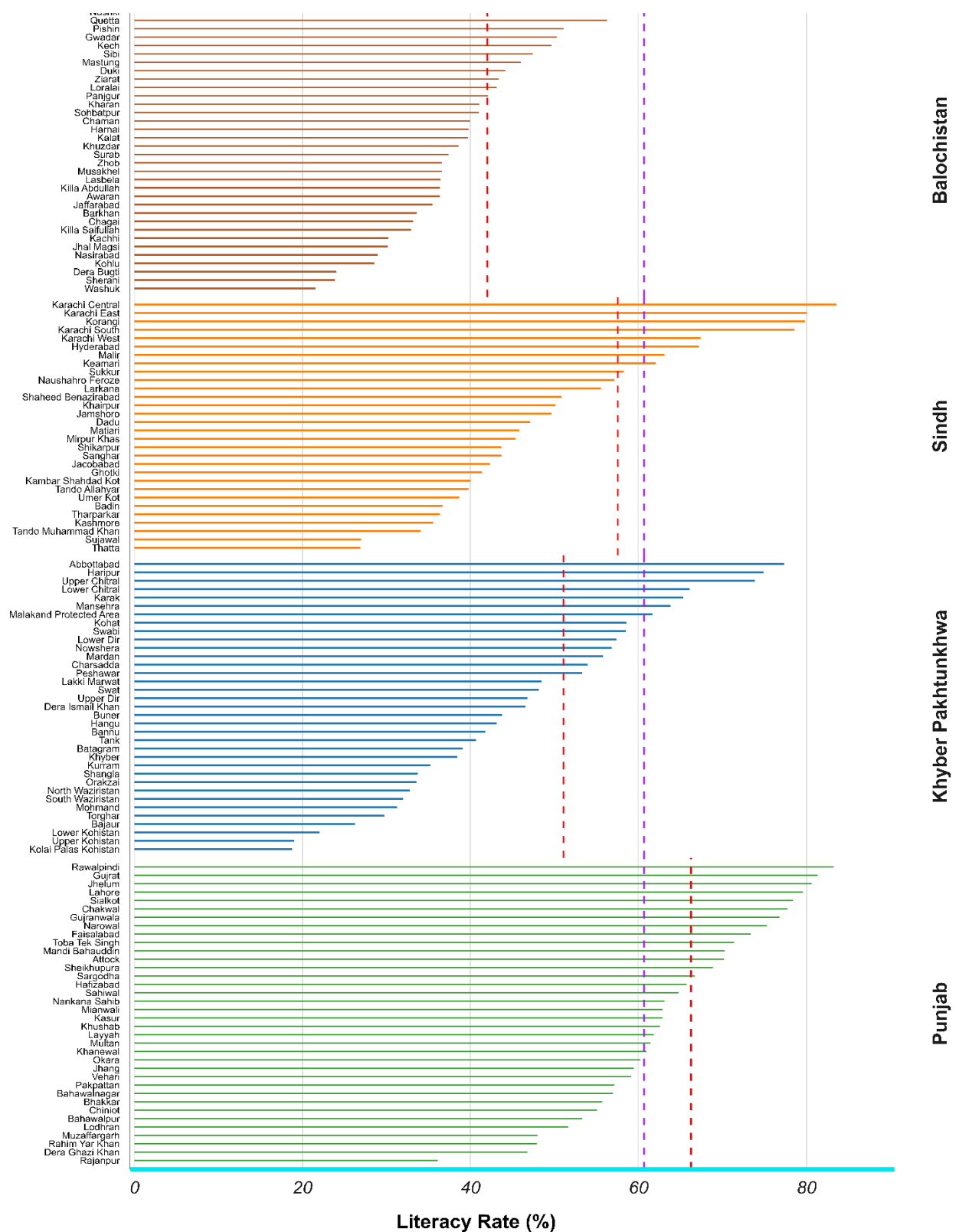
Figure 3.18 : Top Five Districts of Punjab With Higher Literacy Rate, Census-2017 & 2023



The district wise literacy comparison along with provincial and national levels is also illustrated in the Figure 3.19. The Purple and red vertical dashed lines represent National and Provincial literacy levels, respectively. It is revealed that literacy of thirteen Higher literacy districts is even greater than the national average of 61%.



Figure 3.19: District Wise Comparison of Literacy Rate (10 Years And Above)



(The purple and red vertical dashed lines represent national and provincial average literacy rates, respectively.)



3.6.2 Out of School Children (OOSC)

Out of school children (OOSC) 5-16 years are calculated from children who have never been to school and dropped from school. It is an important development indicator reflecting the exclusion of potential future literate work force.

As per Table 3.16 in Census-2023 there are 36 million children aged 5-16 years in Punjab. Out of which 26 million (73.02%) are currently attending school and 10 million (26.98%) are out of school. Disaggregated out of school children (26.98%) reveals that, there are 18.11% who have never been to school and 8.87% are those who ever attended and then dropped from school.

Table 3.16: Population (5-16 Years) In School, Out Of School, Never To School and Dropout by Sex and Rural/Urban, Census-2023

Region / Sex		Number					Percentage			
		Total Population (5-16)	In-School	Out of School Children	Never to School	Drop Out	In-School	Out of School Children	Never to School	Drop Out
Total	All Sexes	35578562	25,978,398	9,600,164	6,443,194	3,156,970	73.02	26.98	18.11	8.87
	Male	18236710	13,464,503	4,772,207	3,056,948	1,715,259	73.83	26.17	16.76	9.41
	Female	17340524	12,513,651	4,826,873	3,385,403	1,441,470	72.16	27.84	19.52	8.31
	Transgender	1328	244	1,084	843	241	18.37	81.63	63.48	18.15
Rural	All Sexes	21777100	14,911,049	6,866,051	4,893,718	1,972,333	68.47	31.53	22.47	9.06
	Male	11150235	7,835,667	3,314,568	2,264,689	1,049,879	70.27	29.73	20.31	9.42
	Female	10626437	7,075,263	3,551,174	2,628,807	922,367	66.58	33.42	24.74	8.68
	Transgender	428	119	309	222	87	27.80	72.20	51.87	20.33
Urban	All Sexes	13801462	11,067,349	2,734,113	1,549,476	1,184,637	80.19	19.81	11.23	8.58
	Male	7086475	5,628,836	1,457,639	792,259	665,380	79.43	20.57	11.18	9.39
	Female	6714087	5,438,388	1,275,699	756,596	519,103	81.00	19.00	11.27	7.73
	Transgender	900	125	775	621	154	13.89	86.11	69.00	17.11

The out of school analysis reveals that the gender disparity is wider for both rural and urban as percentage of out of school females are higher with 33.42% and 19% as compared to 29.73% and 20.57% respectively for males. This may be due to social context, less education facilities for females in their areas.

District wise analysis Out of School Children (OOSC) 5-16 years

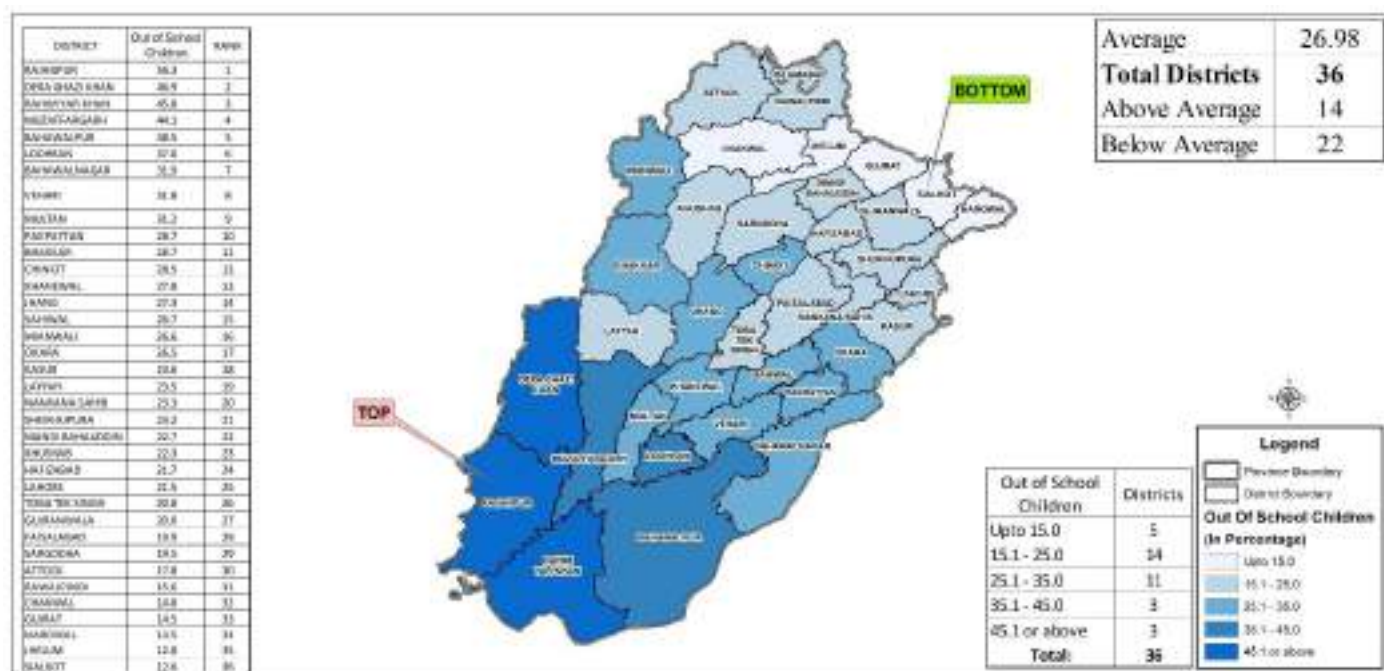
A comprehensive analysis of District-level Out of School Children (OOSC) in Punjab aims to identify disparities, understand regional educational challenges, and inform policy decisions to improve literacy outcomes across districts. The Out of School Children across the districts reveal a diverse distribution. The percentage of OOSC across the 36 districts is 26.98. 14 districts have percentages of OOSC higher than 26.98. Whereas 22 districts have percentages of OOSC below 26.98%. The data, categorized into different out of school brackets, is as follows:

- **Up to 15.0% Out of School:** There are 5 districts i.e. Sialkot, Jhelum, Narowal, Gujrat and Chakwal that fall into this category, indicating that in these areas, the percentages of OOSC is

relatively low which is a good sign for education.

- **15.1% to 25.0% Out of School:** This group with 14 districts namely Rawalpindi, Attock, Sargodha, Faisalabad, Gujranwala, Toba Tek Singh, Lahore, Hafizabad, Khushab, Mandi Bahauddin, Sheikhupura, Nankana Sahib, Layyah and Kasur reflects that one third to half of the population 5-16 years is below the overall provincial percentage of 26.98%.
- **25.1% to 35.0% Out of School:** There are 11 districts namely Okara, Mianwali, Sahiwal, Jhang, Khanewal, Chiniot, Bhakkar, Pakpattan, Multan, Vehari and Bahawalnagar where OOSC percentage fall into this bracket. They are above the overall provincial percentage showing significantly high proportion of out of school children.
- **35.1% to 45.0% Out of School:** 3 districts i.e. Lodhran, Bahawalpur and Muzaffargarh, are showing higher OOSC Percentage in these areas.
- **45.1% and Above Out of School:** 3 districts namely Rahim Yar khan, Dera Ghazi Khan and Rajanpur are in this group and need urgent policy initiatives to address this issue.

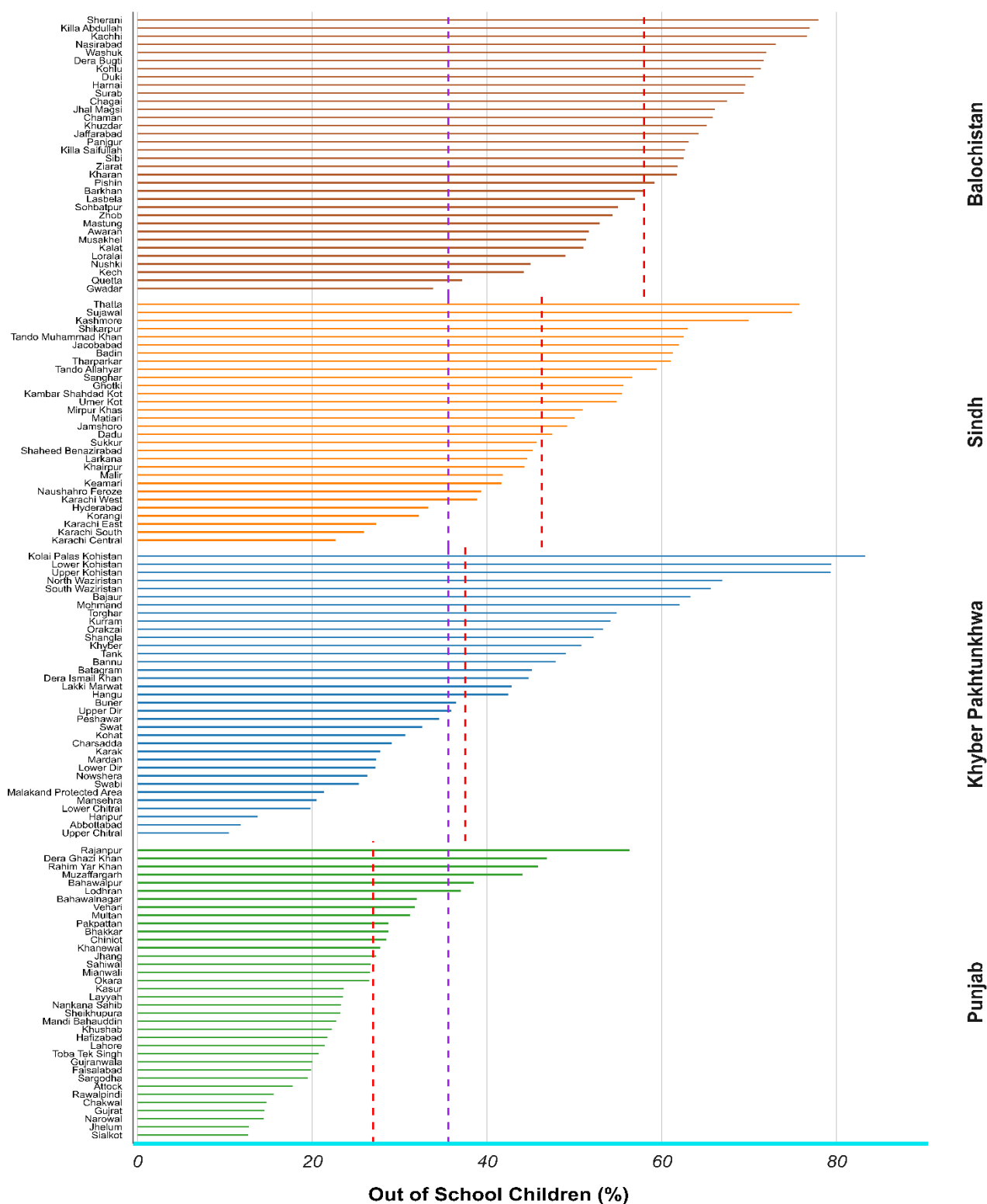
Figure 3.20: District Wise Out of School (5-16) Punjab, Census-2023



The top five districts of Punjab having higher OOSC in Census-2023 are Rajan Pur, D.G.Khan , Rahim Yar Khan, Muzaffargarh and Bahawalpur with percentages 56.62%, 46.87%, 45.81%, 44.1% and 38.5% respectively. By analyzing the low ranked districts in terms of out of school that depicts better situation, it is found that District Sialkot with 12.64%, ranks as a district with the lowest OOSC in Punjab, whereas Jhelum with 12.77% and Narowal with 14.48% also stand in the low ranked districts. The district wise out of school comparison is also illustrated in Figure 3.21, where Punjab province bars are shown in green color. Districts bars shown in descending order with respect to out of school percentages. The situation is quite contented when it is compared with national percentage of 35.60% showing that only 06 districts of Punjab out of 36 are below National percentage.



Figure 3.21: District Wise Comparison of Out Of School Children (5-16 Years Of Age)





3.6.3 Gender Parity Index

Gender parity refers to relative equality between men and women, or girls and boys, in terms of numbers and proportions in a given area. The gender parity index measures the progress towards gender parity in participation and/or educational opportunities for females compared to males. It refers to the ratio of any quantifiable indicator for men compared to the same indicator for women. For example, the gender parity index in primary education is the ratio of female students to male students. The gender parity index of 1 indicates the parity/equality between females and males. A value of less than 1 generally indicates a disparity in favor of boys/men, while a value greater than 1 indicates disparity in favor of girls/women.

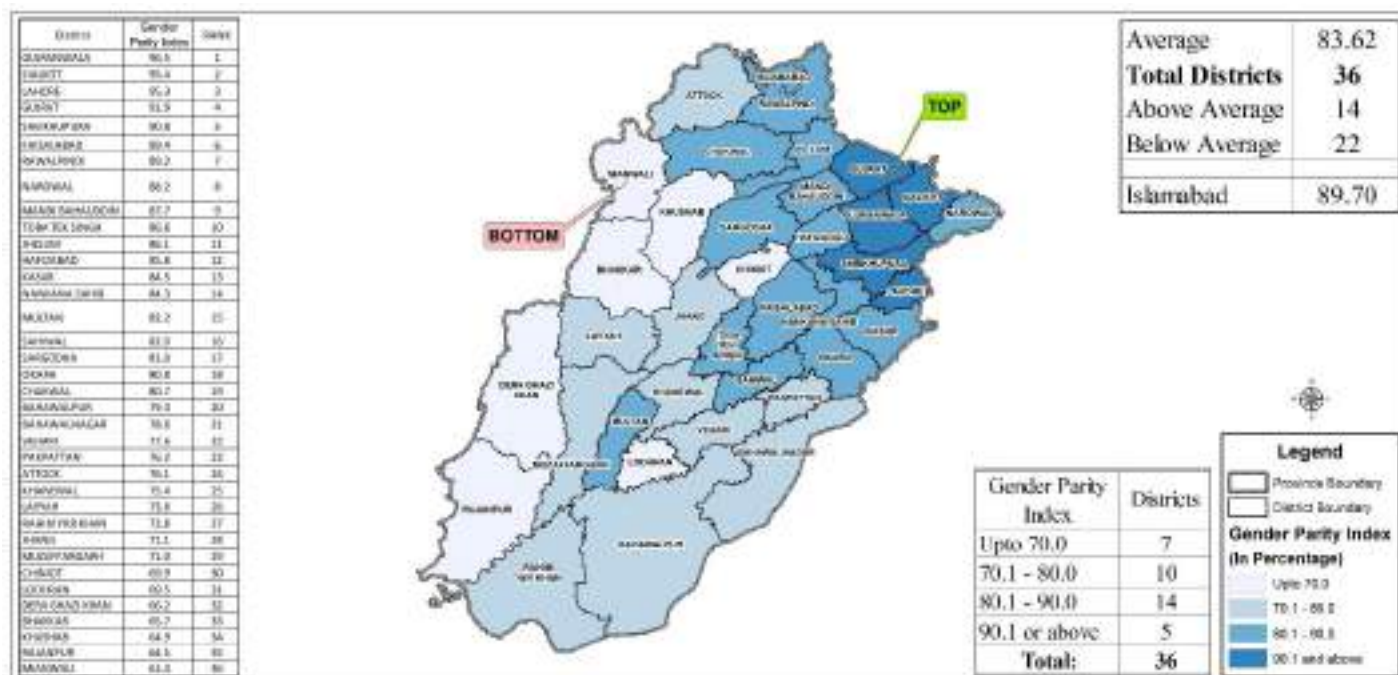
District Wise Analysis of Gender Parity index

Figure 3.22 represents the gender parity in terms of literacy. The gender parity index data (with respect to literacy) across the 36 districts shows an average gender parity index rate of 83.62%. 14 districts have gender parity index higher than the 83.62% whereas 22 districts fall below the average gender parity index of 83.62%. The data, categorized into different gender parity index brackets based on literacy, is as follows:

- **Up to 70.0% Gender Parity Index (Literacy):** 7 districts i.e. Mianwali, Bhakkar, RajanPur, Khushab, D.G.Khan, Lodhran , and Chiniot belongs to this category which indicates the lowest gender parity index.
- **70.1% to 80.0% Gender Parity Index (Literacy):** There are 10 districts namely Muzafargarh, Jhang, Rahim Yar Khan, Layyah, Khanewal, Bahawalnagar, Pakpattan, Attock, Vehari, and Bahawlpur, that fall in this category reflecting moderate levels of gender parity index.
- **80.1% to 90.0% Gender Parity Index (Literacy):** There are 14 districts i.e. Multan, Sargodha, Nankana Sahib, Sahiwal, Kasur, Chakwal, Faisalabad, Toba Tek Singh, Hafizabad, Jhelum, Okara, Mandi Bahauddin, Narowal, and Rawalpindi in this category which shows that a significant portion of districts lie within this range.
- **90.1% and Above Gender Parity Index (Literacy):** There are 5 districts namely Sheikhpura, Lahore, Gujrat, Gujranwala and Sialkot in this category. which indicates that the female and male enjoy the same opportunities and rights in education.

The top two districts of Punjab province having higher gender parity index in Census-2023 are Gujranwala 96.5% and Sialkot 95.4 % of Gujranwala Division.

Figure 3.22 : District Wise Gender Parity Index Punjab, Census-2023



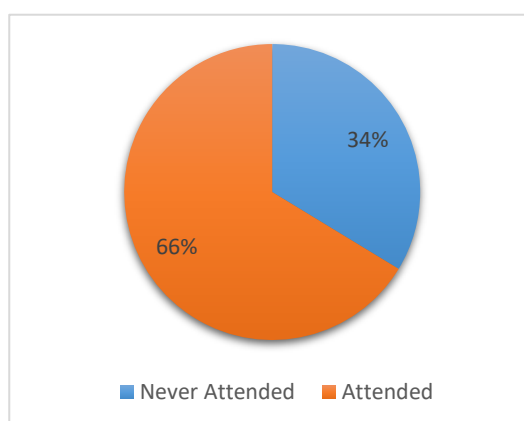
By analyzing the low ranked districts in terms of gender parity index, it is found that lowest ranked districts are Mianwali (61.4%) in Punjab proceeded by Rajanpur with 64.5%.

3.6.4 Educational Attainment

Education meets the shortage of trained and qualified manpower which is an important factor for increasing productivity, accelerating economic growth, individual development, individual freedom and emancipation of women. Census data on educational attainment is, therefore, essential for development plans. According to Census-2023, out of population above the age of 5 years, 66.31% have attended school while a significant proportion of population 33.69% have never received any formal education.

Table 3.17 presents the distribution of persons by sex, educational attainment and rural/urban domains. The results show that total number of educated people in the province, with some kind of educational qualification, amounts to 72,288,658. Out of the total educated population, 25.10% are below primary, 22.27% have passed primary level, 18.56% have passed only middle and 17.36% have passed matriculation. However, the percentage falls to 7.54% for intermediate, 3.79% for graduate of 2 years and 1.44% for Graduate of 4 years 2.62% for masters and 0.37% for M.Phil./ Ph.D. In addition, 0.18% of the educated people hold a diploma or certificate and 0.77% hold other qualifications not covered by the above categories. The

Figure 3.23 : Percentage of Population Who Have Attended School





educational attainment for women exceeds that of men till primary level. but declines beyond that. Moreover, urban areas have a greater percentage of educated people with higher educational attainment as compared to rural areas.

Figure 3.24 : Percentage of Population with Educational Attainment

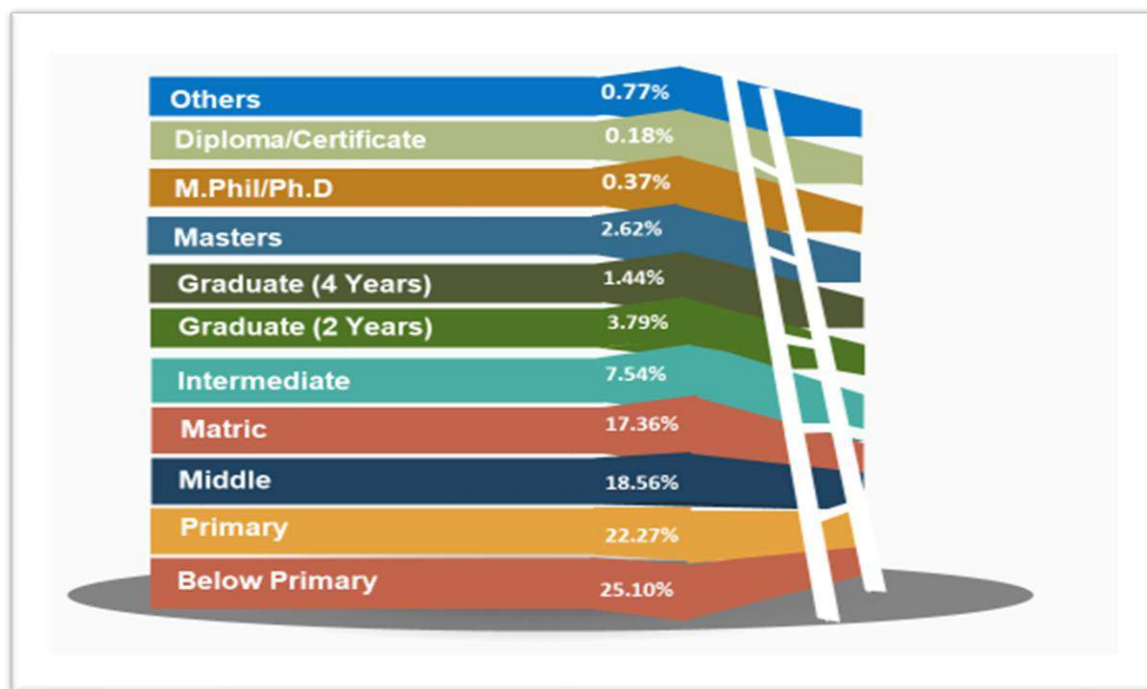


Table 3.17: Percentage of Educational Attainment Levels by Sex and Rural/Urban, Census-2023

Educational Attainment	All Areas				Rural				Urban			
	All Sexes	Male	Female	Trans gender	All Sexes	Males	Females	Trans-genders	All Sexes	Males	Females	Trans-Genders
Below Primary	25.10	24.16	26.28	15.49	28.93	27.33	31.04	12.78	20.84	20.40	21.35	16.20
Primary	22.27	21.89	22.74	35.39	25.29	24.60	26.20	34.22	18.91	18.68	19.16	35.70
Middle	18.56	20.03	16.75	26.39	18.75	20.56	16.38	28.22	18.35	19.41	17.13	25.91
Matriculation	17.36	18.31	16.18	14.82	15.58	16.80	13.97	15.54	19.33	20.09	18.46	14.63
Intermediate	7.54	7.19	7.97	4.18	5.75	5.59	5.96	4.03	9.53	9.09	10.03	4.22
Graduate (2 years)	3.79	3.31	4.39	1.14	2.40	2.04	2.86	1.57	5.35	4.80	5.98	1.03
Graduate (4 years)	1.44	1.44	1.45	0.78	0.71	0.68	0.73	0.79	2.26	2.33	2.18	0.77
Masters	2.62	2.20	3.14	0.67	1.66	1.36	2.07	0.98	3.69	3.20	4.25	0.59
M.Phil./Ph.D.	0.37	0.36	0.38	0.14	0.18	0.19	0.17	0.10	0.58	0.57	0.60	0.15
Diploma/Certificate	0.18	0.23	0.11	0.31	0.13	0.16	0.09	0.39	0.23	0.31	0.13	0.28
Others	0.77	0.89	0.62	0.67	0.62	0.70	0.52	1.38	0.93	1.11	0.73	0.49
Total Literate (5+)	72,288,658	39,957,590	32,326,169	4,899	38,071,447	21,640,135	16,430,295	1,017	34,217,211	18,317,455	15,895,874	3,882



3.7 Employment

Employment refers to an activity in which an individual works for pay and profit. Those who are employed by others are known as employees. The person who engages others to work regularly for them is known as an employer. In Census 2023, two questions were asked regarding employment with reference of past one year of working. The employment statistics captured in Census 2023, cannot be exactly comparable with Labour Force Survey due to its extensive nature and the reference period. The objective of its capturing in Census 2023 is to take snapshot of employment along with other demographic indicators.

Table 3.18: Percentage of Population by Employment, Sex and Rural/Urban, Census-2023

Employment	All Areas			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Employed	40.45	63.21	16.40	41.98	63.46	19.58	38.31	62.86	11.86
	100	100	100	100	100	100	100	100	100
Paid Employee	34.14	36.74	23.56	24.65	28.83	10.52	48.74	47.77	54.29
Self Employed (Agri)	17.78	20.48	6.79	26.49	31.81	8.53	4.40	4.70	2.69
Self Employed (Non-Agri)	21.71	25.59	5.91	15.58	18.78	4.77	31.13	35.07	8.61
Employer	6.22	6.87	3.56	5.40	6.03	3.27	7.48	8.05	4.25
Unpaid F.Helper (agri)	11.30	6.47	30.95	17.90	10.68	42.31	1.14	0.62	4.16
Unpaid F.Helper (Non-Agri)	8.84	3.84	29.23	9.98	3.88	30.60	7.10	3.79	25.99
Un Employed	8.98	8.84	9.13	10.23	10.06	10.40	7.23	7.16	7.31
Not LF & Student (15-24)	36.93	20.98	53.60	39.01	21.93	56.66	34.03	19.66	49.25

Overall, 66.22 million. (38.56%) people are employed in Pakistan during the reference period of past one year. Table 3.18 reveals employment statistics in Punjab breaking down the data by total employment and different employment categories. In Punjab, 40.45% were employed 63.21% males and 16.40% females are employed. Whereas percentage of male employees is higher in rural area i.e. 63.46% as compared to urban areas i.e. 62.86%.

However, percentage of females' employees is higher in rural with 19.58% as compare to urban areas with 11.86%. The male percentage is mainly higher due to higher number of self employed in–non agriculture activity in urban areas with 35.07% and 18.78 % in rural and employers with 8.05% in urban and 6.03% in rural respectively. This may due to better business and services opportunities.

Paid employees are higher than all other categories. Paid employees are 34.14% in the province with greater proportion in urban areas (48.74%) as compared to rural areas (24.65%). The percentage of female paid employees are higher in urban due to high percentage of females in urban areas. The percentage of females paid employees in Urban areas working in public and private sector is 54.29% and female working in rural areas is 10.52%.

The population having its own land and own livestock is included in the category of Self Employed (agriculture). In Punjab 17.78% employees are Self Employed in agriculture this percentage is higher in male than female population with 20.48% and 6.79%. respectively.



Regard to the contributing family worker (unpaid family helper) both in agriculture and non-agriculture activity the percentage of female population with 30.95% and 29.23% respectively is higher than the male percentage 17.90% and 9.98% respectively. The percentage is higher in rural areas as females are mostly employed in agriculture sector as contributing family worker. According to Census 2023 the unemployed population is 8.98% in the province which is higher in rural areas with 10.23% as compared to urban areas with 7.23%. Unemployment is higher in females with 9.13% as compared to males with 8.84%.

As Pakistan population is predominantly young and 18.56% population are of age 15-24. Therefore, an indicator for youth (15-24) “Not in employment and education” has been calculated which shows that in Punjab 46.86% of youth are not in employment and education. The percentage is higher in females with 53.60% than males with 20.98%. This needs immediate policy interventions to bring this potential to efficient utilization for country prosperity.

3.8 Migration

Migration is to move from one place, or locality to another due to any reason. In Census 2023 the migration has been captured as Intra provincial migration and **Inter provincial migration**.

Intra provincial migration is the movement of people from one geographic area to another within the same province or territory. The district or city of birth within the province is different from her/his district/city of enumeration within the province.

Inter provincial migration is the movement of people from one province or territory to another within a country

The migration in Table 3.19 is calculated for the person whose district of birth is different from current district of residence.

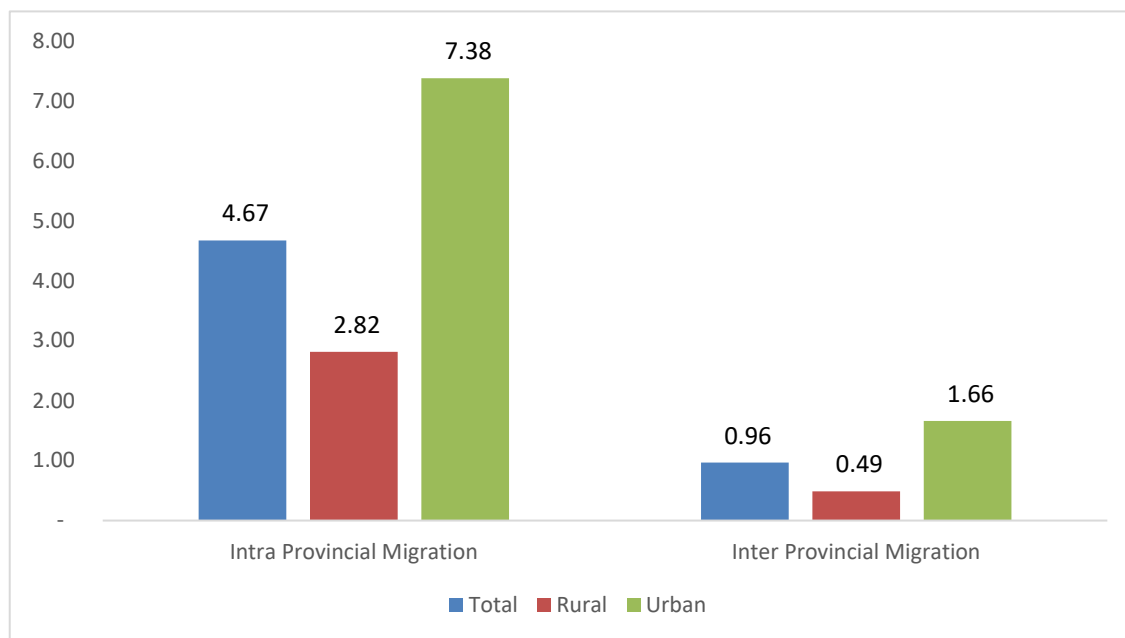
Table 3.19: Percentage of Migration by Gender and Rural / Urban

	Total				Rural				Urban			
	Total	Male	Female	Transgender	Total	Male	Female	Transgender	Total	Male	Female	Transgender
Migration	5.75	5.11	6.41	12.75	3.38	2.51	4.28	8.96	9.22	8.87	9.58	13.89
Intra Provincial Migration	4.67	4.02	5.35	11.54	2.82	1.97	3.69	8.38	7.38	6.98	7.79	12.50
Inter Provincial Migration	0.96	0.97	0.96	1.11	0.49	0.46	0.52	0.52	1.66	1.71	1.61	1.29
Migration from Abroad	0.12	0.12	0.11	0.09	0.07	0.08	0.07	0.06	0.18	0.18	0.18	0.10
Reasons of Migration												
Job/ Business	18.88	37.74	3.06	38.62	14.39	33.94	2.42	34.71	21.29	39.29	3.48	39.38
Education	4.71	6.93	2.85	2.75	2.83	4.94	1.53	1.72	5.72	7.74	3.72	2.96
Marriage	25.50	1.47	45.66	-	37.77	2.30	59.48	-	18.93	1.13	36.53	-
With family	40.86	39.88	41.70	6.46	35.65	42.96	31.18	12.03	43.66	38.62	48.66	5.38
Back To Home	0.34	0.51	0.20	-	0.43	0.80	0.20	-	0.29	0.39	0.20	-
Others	9.71	13.48	6.52	52.16	8.94	15.07	5.19	51.55	10.11	12.83	7.40	52.28



The above Table reveals that total migration in Punjab is 5.75% which is higher in urban areas with 9.22% as compared to rural areas with 3.38%. In Punjab intra migration is high especially in urban areas with 7.83%, this means people from rural areas of Punjab moved to urban area / districts for sake of employment and education due to non-availability of resources/ amenities in their areas. Inter migration i.e. migration from other province is 0.96%, high in urban areas with 1.66%. District wise comparison reveals that higher migration in Punjab is in Lahore District with 14.64% and lowest in Dera Ghazi khan district with 0.71%.

Figure 3.25 : Comparison of Intra Provincial Migration and Inter Provincial Migration by Rural/Urban



The inter-provincial migration to Punjab Province totals 1,228,104 individuals as depicted in Table 3.20. Among these, 676,420 migrants are from Khyber Pakhtunkhwa, 266,389 from Punjab, 68,656 from Balochistan, 44,249 from the Islamabad Capital Territory, 30,634 from Gilgit-Baltistan, and 141,756 from Azad Jammu & Kashmir. This distribution shows a significant movement from neighboring regions, particularly from Khyber Pakhtunkhwa.

Table 3.20: Migrants Population of Punjab Province from Other Provinces

Inter Provincial Migration		1,228,104
Khyber Pakhtunkhwa		676,420
Punjab		266,389
Balochistan		68,656
Islamabad Capital Territory		44,249
Gilgit-Baltistan		30,634
Azad Jammu & Kashmir		141,756



The figure 3.26 illustrates inter provincial migration, depicting individuals relocating from various provinces to Punjab. The highest percentage of migrant's population coming to Punjab province are from Khyber Pakhtunkhwa with 55.08% followed by Punjab 21.69%, AJ&K 11.54%, Balochistan 5.59%, Islamabad 3.60 % and Gilgit Baltistan 2.49%.

Figure 3.26 : Inter Provincial Migration

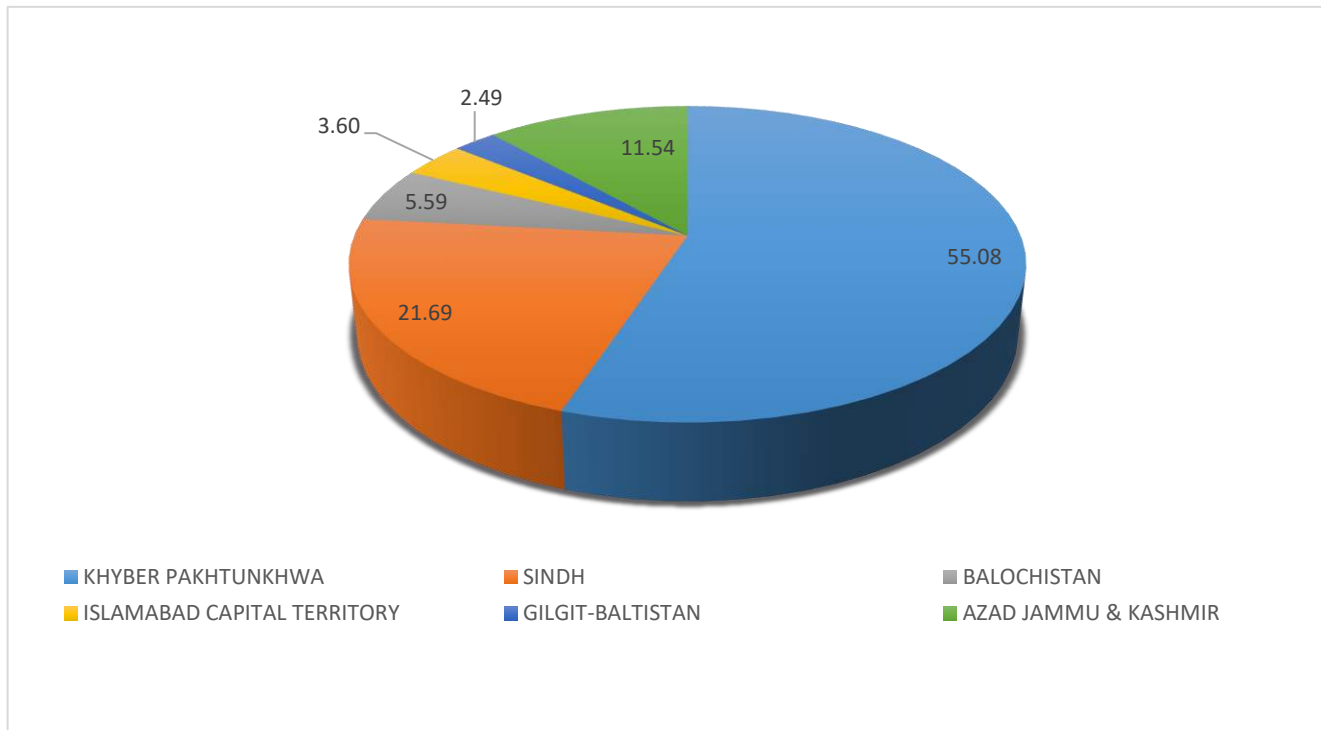
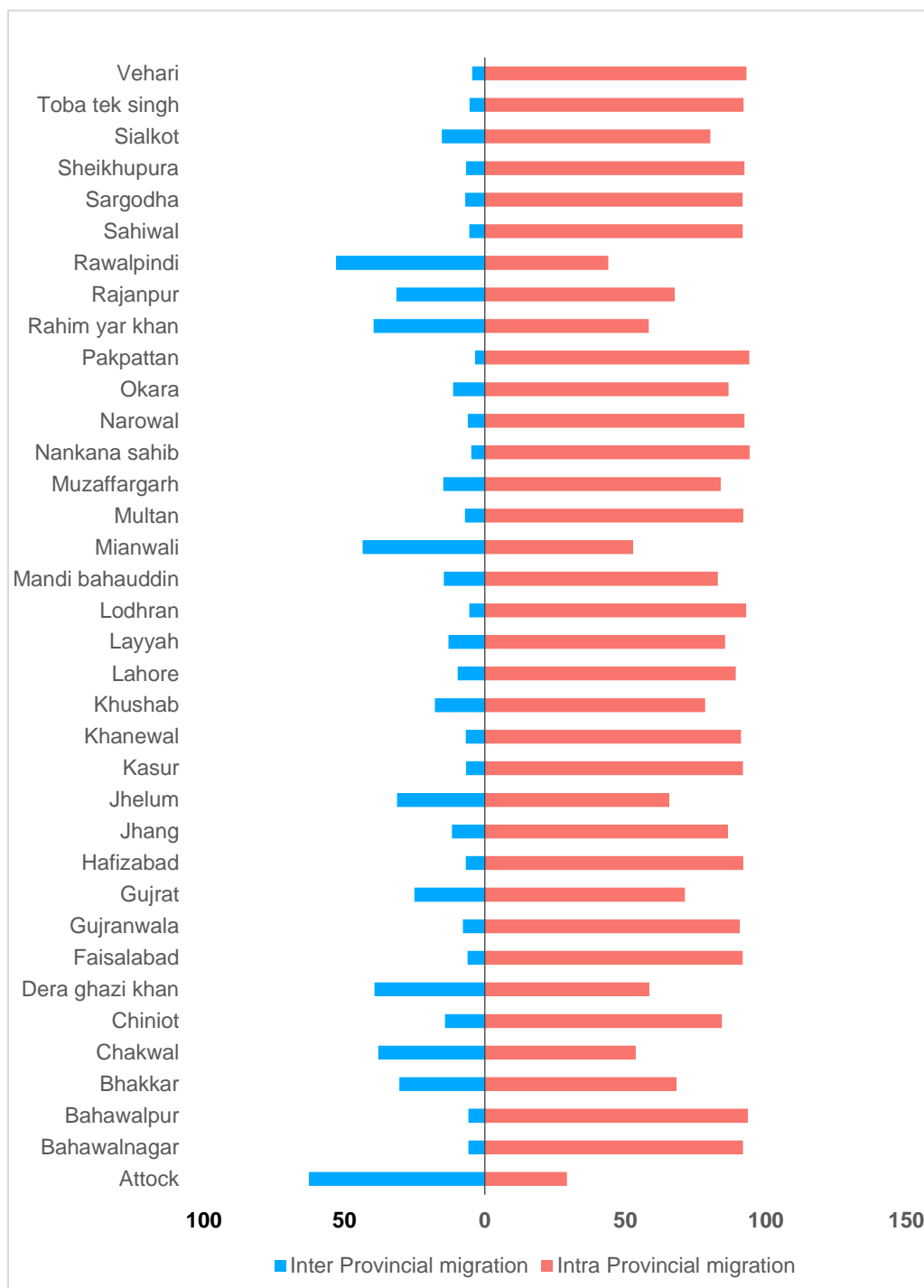


Figure 3.27 illustrate the district wise inter provincial migration as well as intra provincial migration. The percentages of inter and intra provincial migration are calculated from the percentages of Province Punjab inter and intra provincial migration. In inter provincial migration the highest percentage is of Attock District with 62.64%. The second highest inter migration is at district Rawalpindi with 52.94% followed by District Mianwali with 43.47% and District RahimYar khan with 39.56%. The lowest district in inter migration is District Vehari with 4.48% followed by District Nankana Sahib with 4.82%.

The highest percentages of intra migration in districts as in inter migration is District Nankana sahib with 94.21 % district followed by District Pakpattan with 94.15% and district vehari 93.12% the lowest intra migration is in District Attock with 29.28% and district Rawalpindi with 43.91%.



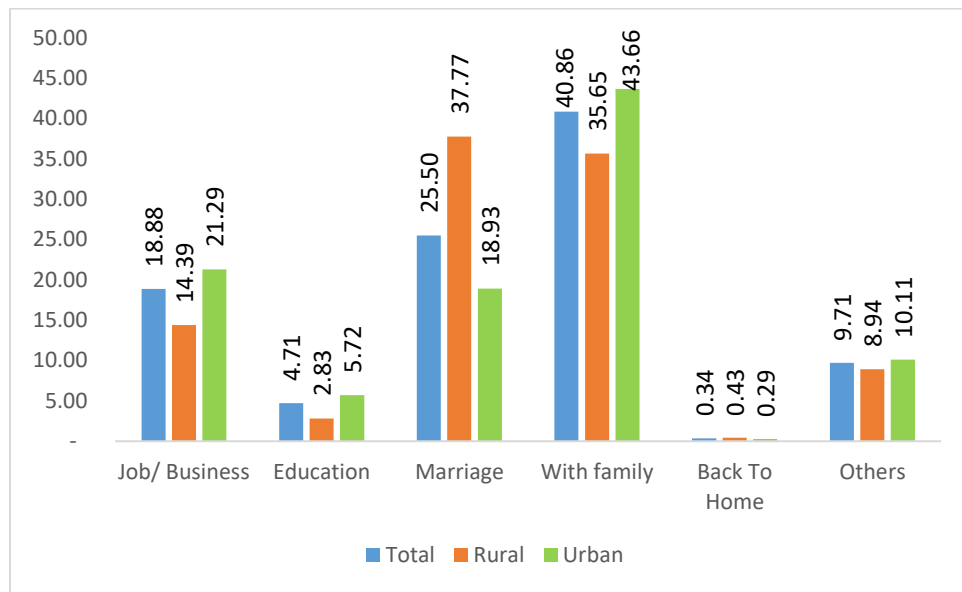
Figure 3.27: District Wise Comparison Intra Provincial Migration and Inter Provincial Migration



The perception of moving to urban areas is substantiated by the evidence from data for reasons of migration (Figure 3.28). It is found that highest reason cited for migration is moving with family with 40.86% followed by Marriage with 25.50%, Job/Business with 18.88%, others with 9.71% and education with 4.71%. Here again the percentage is higher in urban areas than rural areas.

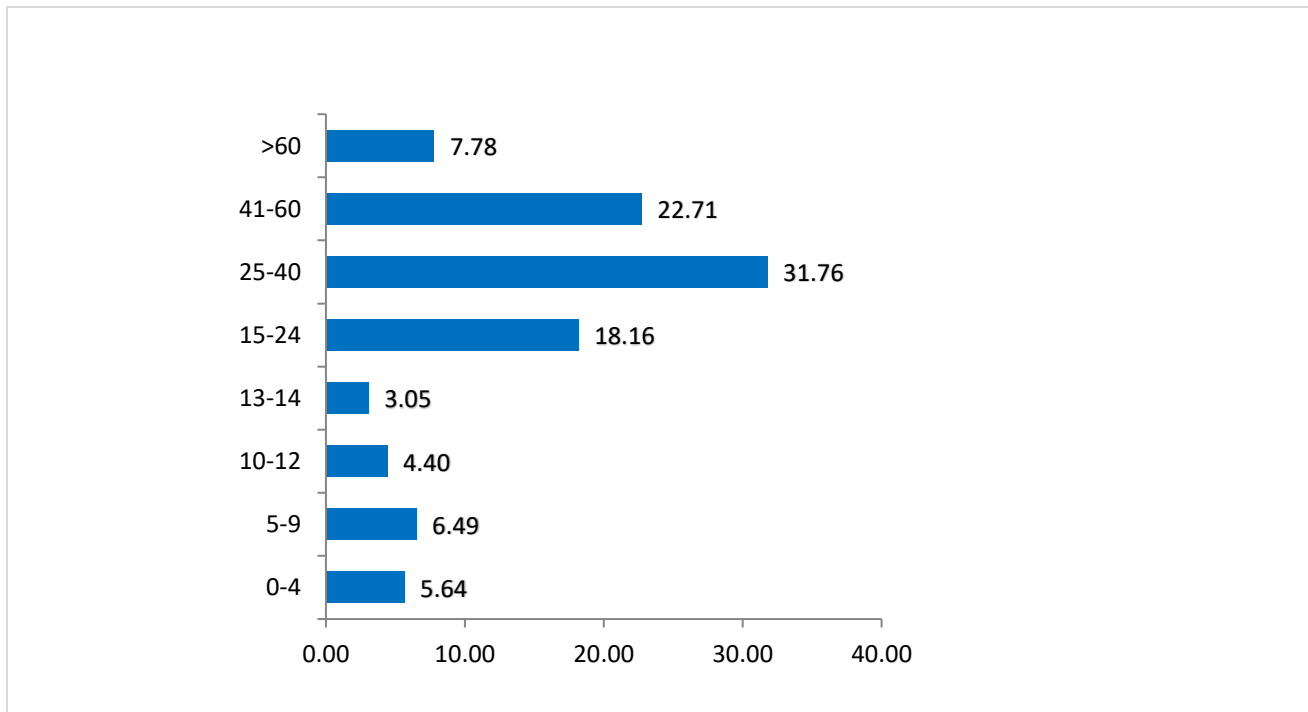


Figure 3.28: Reasons of Migration by Rural/Urban



Analysis of migration by age groups shows that the migration in the age group 25-40 is highest with 31.76% followed by 41-60 age group with 22.71% and 15-24 age group with 18.16%. Remaining groups have less concentration of migrated population. The age group 25-40 years is the group of young population where the reason for migration of population is due to job/ business and marriage.

Figure 3.29 : Migration by Age Groups



PART - IV

HOUSING CHARACTERISTICS





PUNJAB



FUEL USED FOR COOKING



TYPE OF HOUSING UNIT



MAIN SOURCE OF DRINKING WATER (INSIDE AND OUTSIDE)



TOILET FACILITIES





HOUSING CHARACTERISTICS

A total of fourteen (14) main questions were asked in the Census-2023 to collect and assess the housing characteristics of the province. The questions ranged from tenure of the housing unit constructed to the number of family members living abroad (who stayed abroad for six months or more). The main focus was on assessing the type of housing units, type of material used in construction and the type of housing facilities available in the housing unit. This part of the Provincial Census Report has been divided into two sections namely: Type of Housing Units which constitutes information such as level of congestion, nature of tenure, period of construction of owned housing units, construction material used for construction of walls & roofs while the second part comprises of Availability of Housing Facilities, including information on sources of drinking water, lighting, fuel used for cooking, availability of kitchen, bathroom and toilet facility .

4.1 TYPE OF STRUCTURES

The sustainable housing and infrastructure development is the concern, before taking a step towards contributing to this sector. It is important for everyone to be aware of different types of buildings and what they are meant for. Every constructor, be it an individual building a new home or a builder developing a vertical city, needs to have the proper information to be able to build in compliance with government regulations.

As Census is a complete count of all structures and population of country, therefore, to capture the different variations in structure as per changing ground results. PBS with the recommendation of Census Advisory Committee, include the question regarding the type of structure with different variations and its identification. The type of structures has been included first time in Census-2023. Following are the categories that were included to determine the structure and what they meant for.



Normal Residential:

1-3 Story Residential Buildings



Normal Economic:

1-3 Story Economic Activity Buildings



Normal Economic + Residential:

1-3 Story Multi-Purpose Buildings



Multistory Residential:

All structures with 4 and above floors



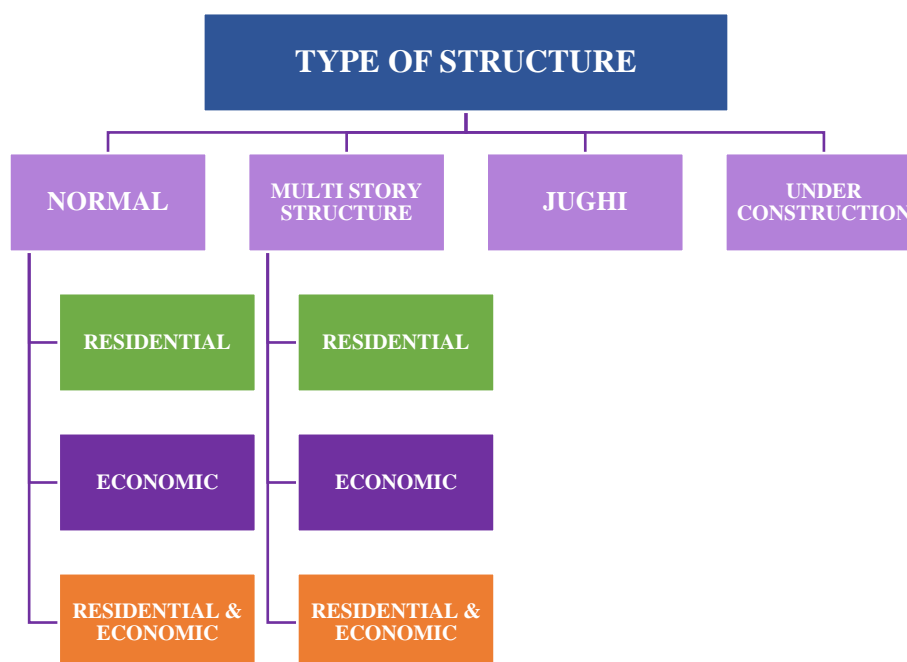
Multistory Economic:

All structures with 4 and above floors with Economic Activity Buildings



Multistory Economic + Residential:

More than 3 Floors Multi-Purpose Buildings



There are main four categories to determine the type of structure i.e. normal structures, multistory structure, Jughi/ jhompri and under construction where normal and multistory are sub categories as “residential”, “economic” and “residential and economic”. The below figure shows the percentages of all categories from the total 22,119,690 housing structures. The sub categories of normal structures i.e. residential with 78.57%, economic with 14.78 % and residential and economic with 3.66 % are higher than rest of the type of structures. In multistory structures the multistory residential are 0.08% out of total housing structures. The category Jughi/Jhompri/Tent/Cave contribute 0.47% and under construction is 2.39%.









0.08%	0.02%	0.02%	78.57%	14.78%	3.66%	0.47%	2.39%
							
Multi-Story (Residential)	Multi-Story (Economic)	Multi-Story (Residential & Economic)	Residential	Economic	Residential & Economic	Jughi/Jhompri/ Tent/ Cave	Under Construction

Table 4.1 shows the percentages of normal structures reported with 97.02 % and High Rise/ Multistory structure are reported as 0.12 % out of total type of structures. Table 4.1 also shows the percentages of sub-categories of normal and multistory from its main category. The normal structures with predominantly residential within it with 81%, similarly High Rise/ Multistory structure with predominantly residential within it with 67.73%.

Table 4.1: Types of Structures by Rural/Urban, Census- 2023

Types of Structures	Total	Rural	Urban
All Structures	22,119,690	13,383,270	8,736,420
High Rise / Multi-Story Structure			
Residential	18,136 (0.08%)	2,153 (0.02%)	15,983 (0.18%)
Economic	3,533 (0.02%)	269 (0.002%)	3,264 (0.04%)
Residential & Economic	5,109 (0.02%)	757(0.01)	4,352 (0.05%)
Normal Structure			
Residential	17,379,886 (78.57%)	10,613,874 (79.31%)	6,766,012 (77.45%)
Economic	3270252 (14.78%)	2,049,762 (15.32%)	1,220,490 (13.97%)
Residential & Economic	810,060 (3.66%)	378,070 (2.82%)	431,990 (4.94%)
Others			
Jughi/Jhompri/Tent/Cave	104,267 (0.47%)	68,836 (0.51%)	35,431 (.041%)
Under Construction	528,470 (2.39%)	269,555 (2.01%)	258,915 (2.96%)

4.2 Type of Housing Units

4.2.1 Level of Congestion - Persons and Rooms

According to the Census-2023, there are about 20 million households in Punjab as compared to 17 million enumerated in Census-2017, which shows an increase of 16.71% during the inter censal period of 2017-2023. The distribution of the housing units by rural and urban domain in the province is 59.03% and 40.97% respectively, as shown in Table 4.2.

Level of congestion indicates the number of persons and rooms per housing unit being reflective of the crowding and tight living conditions of a population. It also helps to assess the overall requirement of the housing units that can ultimately be used for future planning and policy formulation in housing sector both at the micro and macro levels.

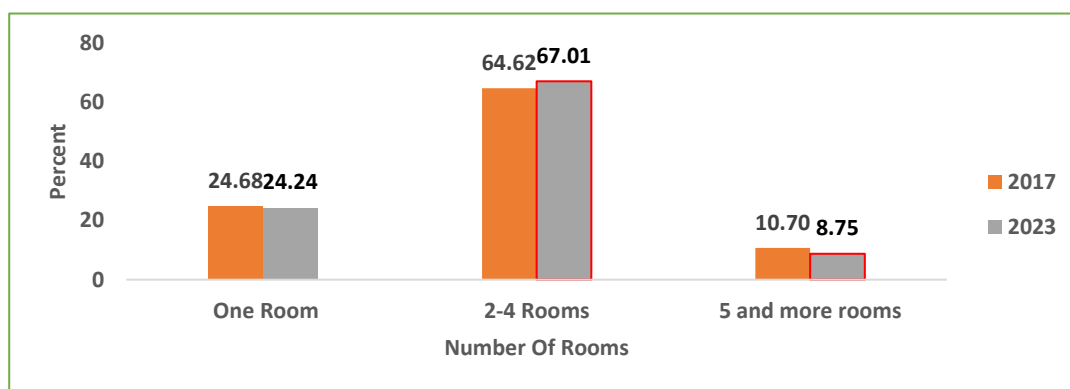
The level of congestion determined by the average household size has increased from 6.38 persons reported in Census-2017 to 6.44 persons in Census-2023.

Table 4.2: Indices of Level of Congestion in Housing Units by Rural/Urban, Census-2017 and 2023

Level of Congestion	2017			2023		
	All Areas	Rural	Urban	All Areas	Rural	Urban
Average Household size	6.38	6.46	6.24	6.44	6.46	6.39
Housing Units with Single Room (%)	24.68	26.66	21.38	24.24	28.12	18.66
Housing Units with 2-4 Rooms (%)	64.62	63.74	66.10	67.01	64.32	70.88
Housing Units with 5 and More Rooms (%)	10.70	9.60	12.52	8.75	7.56	10.46
Housing Units Breakdown by Rural/Urban (%)	100	62.55	37.45	100.00	59.03	40.97
Number of Households	16,999,685	10,632,689	6,366,996	19,839,980	11,712,312	8,127,668

The percentage of single room houses has decreased from 24.68% in Census-2017 to 24.24% in Census-2023. This change is particularly notable in urban areas, where overcrowding in one-room units has been a significant issue. However, this shift also highlights the ongoing challenges in providing adequate housing for all. The percentage of housing units with two to four rooms has increased from 64.62% in Census-2017 to 67.01% in Census-2023, whereas housing units with five and more rooms has decreased to 8.75% in 2023 as compared to 10.70% in Census-2017.

Figure 4.1: Housing Units by Number of Rooms, Census-2017 and 2023



4.2.2 Nature of Tenure

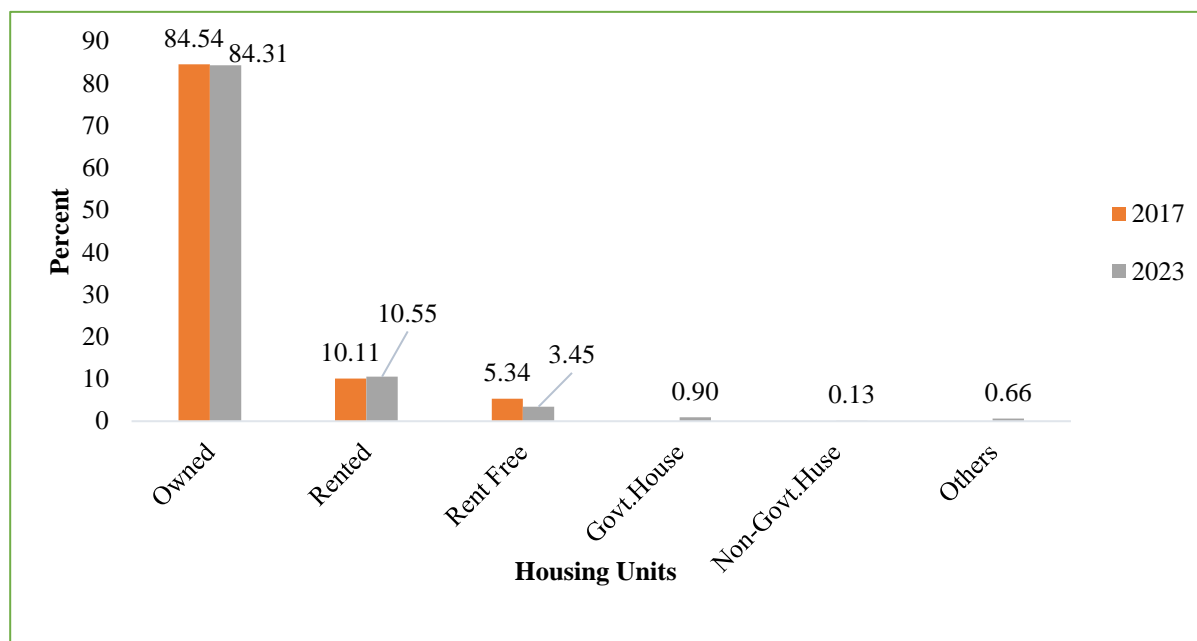
The categories of Government, Non-Government & Others are recently included in Census-2023. The houses allotted by government to government employees are termed as “Govt house” while in private sector they allot houses to their employees are known as “Non-Govt house”. The houses other than all categories of housing status is mentioned in “Others”.

Of the total housing units enumerated in the Census-2023, there is a decrease in the proportion of owned houses i.e. 84.31% as compared to 84.54% in the Census-2017 as shown in Table 4.3. Moreover, 10.55% housing units are reported as rented which has increased as compared to 10.11% in Census-2017. The rent free housing units have shown a decrease with 3.45% in Census-2023 as compared to 5.34% in Census-2017. The percentages for Govt. house, Non-Govt. house and others are nominal.

Table 4.3: Percentage of Housing Units by Nature of Tenure and Rural/Urban, Census-2017 and 2023

Tenure	2017			2023		
	All Areas	Rural	Urban	All Areas	Rural	Urban
Owned	84.54	90.96	73.83	84.31	91.51	73.94
Rented	10.11	3.09	21.85	10.55	3.04	21.37
Rent Free	5.34	5.95	4.32	3.45	4.29	2.25
Govt. House	-	-	-	0.90	0.26	1.81
Non-Govt. House	-	-	-	0.13	0.13	0.14
Others	-	-	-	0.66	0.77	0.50
Number of Housing units	16,999,685	10,632,689	6,366,996	19,839,980	11,712,312	8,127,668




Figure 4.2 : Housing Units by Nature of Tenure, Census-2017 and 2023



4.2.3 Construction Material of House

The Pacca, Semi Pacca and Kacha Housing Units aims to assess the affordability and accessibility of housing, tracking changes in construction costs and property values. It is fundamental to a country's development as it provides a foundation for stability and security, enabling individuals and families to invest in their future. The analysis informs policy decisions, helping governments and stakeholders address housing shortages and promote affordable housing initiatives.

Census-2023 collects information regarding pacca housing units, semi pacca housing units and kacha housing units. Pacca housing units is defined as a well-constructed, permanent or concrete house made of durable materials such as bricks, cement and steel etc. The roof and walls of a pacca housing unit are made from durable materials like cement, concrete, burnt bricks, jack board, timber or stone. Semi pacca housing unit is defined as house made of pre-fabricated material. It also includes house either roof or wall made of pre-fabricated material. The housing unit having roof made up of cement and wall made up of ply wood are also declared as semi pacca housing unit. Kacha housing unit includes

Pacca House			Semi Pacca House			Kacha House		
								
Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
80.80	72.99	92.06	11.93	16.41	5.49	7.26	10.60	2.45



houses where walls are made of bamboo, mud or ply wood/ card board and roof is made by cement/ iron sheet or garder / T-iron or pre-fabricated material.

In rural areas of Punjab province majority of housing units have kacha structures with percentage of 10.60%. Pacca housing units in Punjab are 80.80%, higher in urban areas with 92.06% as compared to rural areas with 72.99%. Semi pacca housing units are higher in rural areas (16.41%) as compared to urban areas with 5.49%.

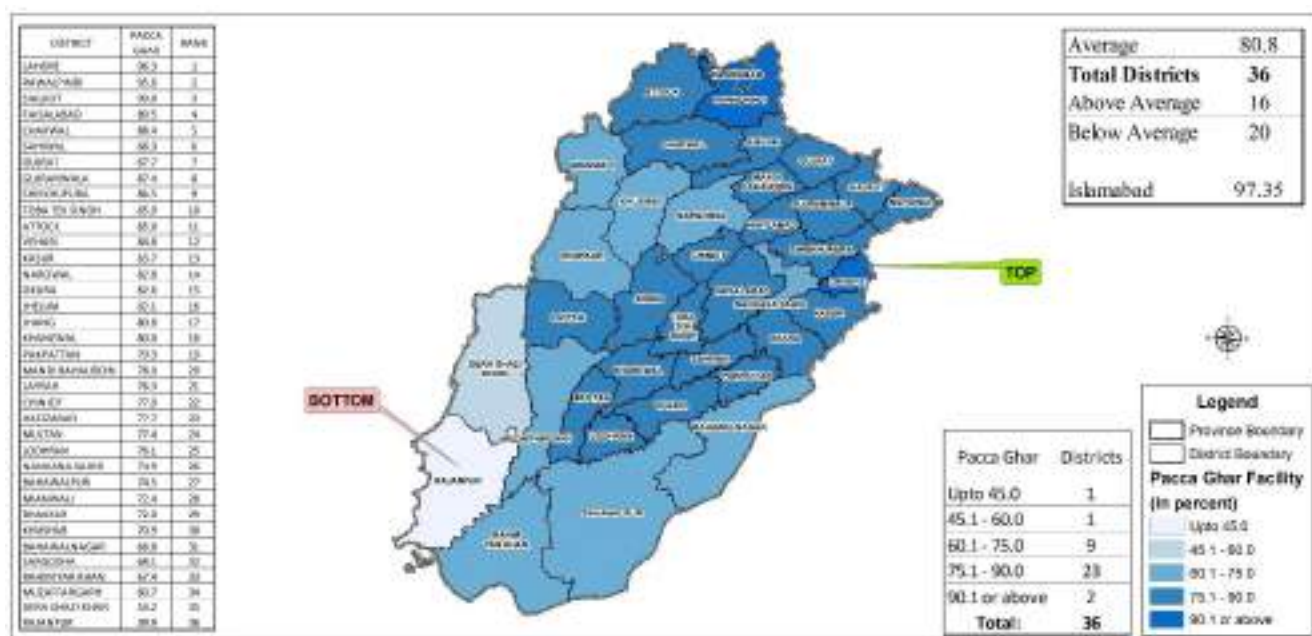
District Wise Analysis of Pacca Houses

District wise analysis of Pacca has reveals that across 36 districts overall percentage of pacca housing units is 80.8%. The districts with pacca housing units' percentages higher than the overall percentage of 80.8% are 16 whereas, 20 districts fall below the overall percentage of pacca housing units in the province. This comparison serves as a benchmark to assess the socioeconomic development, urbanization, and housing quality disparities across districts, enabling targeted interventions and policy decisions to bridge the gaps and promote equitable growth and development.

The pacca housing unit concentration across the districts reveal a diverse distribution. The data, categorized as follows:

- **Up to 45.0% Pacca housing units:** There is only 01 district i.e. Rajan Pur with 40% Pacca Housing units indicate low to moderate levels of socioeconomic development and urbanization.
- **45.1% to 60.0% Pacca housing units:** There is also 01 district i.e. Dera Ghazi Khan with 53% Pacca Housing units. This range suggests a balance between rural and urban populations, with opportunities for targeted investments to further improve housing quality and infrastructure.
- **60.1% to 75.0% Pacca housing units:** There are 09 districts with percentages of Pacca housing units between 60.1 to 75.0%. This range suggests a strong foundation for middle-class growth and moderate urbanization.
- **75.1% to 90.0% Pacca housing units:** 23 districts in this range indicate better economic stability and infrastructure development.
- **90.1% or above Pacca housing units:** 02 districts i.e. Lahore and Rawalpindi achieve this high pacca household level.

Figure 4.3 : District Wise Pacca Housing Units Punjab, Census-2023



By analyzing the low ranked districts in terms of Pacca housing units, the Lowest percentage is observed in Districts Rajan Pur 39.9%. The other districts with lower percentage of Pacca housing units are D.G. Khan are 53.2% and Muzzafargarh with 60.7%. The reason for lower percentage of pacca housing units is due to many factors like limited resources, lack of infrastructural resources, Rural-urban migration & traditional norms etc.

4.2.4 Period of Construction

As reflected in Table 4.4, 1.67% of the owned housing units were found in the category of ‘under construction’ in the Census-2023. The recent trend of under construction housing units is higher in rural areas as compared to urban areas.

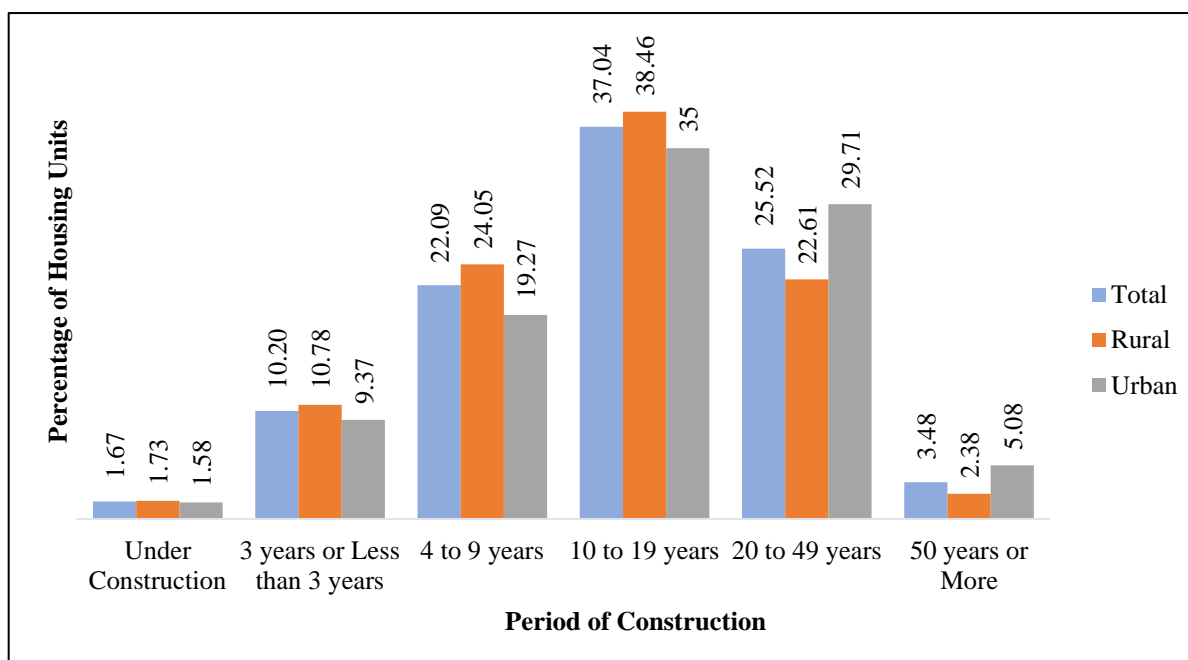
It is found that in rural area vast majority of housing units i.e. 38.46% are relatively newly constructed within a period of 10 to 19 years. However, in urban areas the majority i.e. 35% also lies within a same period of 10 to 19 years followed by 29.71% within 20 to 49 years.

Table 4.4: Percentage of Owned Housing Units by Period of Construction and Rural/Urban, Census-2023

Period of Construction	2023		
	All Areas	Rural	Urban
All Categories	100	100	100
Under Construction	1.67	1.73	1.58
3 years or Less than 3 years	10.20	10.78	9.37
4 to 9 years	22.09	24.05	19.27
10 to 19 years	37.04	38.46	35.00
20 to 49 years	25.52	22.61	29.71
50 years or More	3.48	2.38	5.08
Number of Housing Units	19,839,980	11,712,312	8,127,668

Figure 4.4 portrays the comparative picture of the housing units by period of construction for the Census Year 2023. The figure makes it evident that the percentages of the housing units built between 10 to 19 years ago are the highest, whereas the housing units constructed 50 years prior to Census 2023 are 3.48 %.

Figure 4.4 : Housing Units by Period of Construction, Census-2023



4.2.5 Construction Material Used for Walls

Quality of housing units and living standards can be assessed through the construction material used for the walls and roofs of the housing units. In Census 2023, different categories like Baked Bricks/Blocks/Stones, Unbaked Bricks/ Mud, Wood/Bamboo, Plywood/ Cardboard, Pre-Fabric & others were asked to assess the housing construction material used for outer walls as depicted in table 4.5.







86.60%	11.84%	0.07%	0.02%	0.03%	0.82%
					
Baked Bricks/ Blocks/Stones	Unbaked Bricks/ Mud	Wood/Bamboo	Plywood/ Cardboard	Pre-Fabric	Others

Table 4.5: Number and Percentage of Housing Units by Construction Material Used for Outer Walls, Census- 2017 and 2023

Construction Material		2017			2023		
		All Areas	Rural	Urban	All Areas	Rural	Urban
Baked Bricks / Blocks / Stones	Number	14,754,896	8,661,384	6,093,512	17,180,972	9,410,570	7,770,402
	Percent	86.80	81.46	95.70	86.60	80.35	95.60
Unbaked Bricks / Mud	Number	1,857,535	1,690,498	167,037	2,348,560	2,083,657	264,903
	Percent	10.93	15.90	2.62	11.84	17.79	3.26
Wood / Bamboo	Number	160,319	125,875	34,444	138,757	107,806	30,591
	Percent	0.94	1.18	0.54	0.70	0.98	0.38
Plywood/Cardboard*	Number	-	-	-	3,502	2,068	1,434
	Percent				0.02	0.02	0.02
Pre-Fabric*	Number	-	-	-	6,041	2,742	3,299
	Percent				0.03	0.02	0.04
Others	Number	194,740	140,008	54,732	162,148	105,469	56,679
	Percent	2.30	3.37	1.26	0.82	0.90	0.70
Number of Households		16,999,685	10,632,689	6,366,996	19,839,980	11,712,312	8,127,668

*Plywood/Cardboard and Pre-Fabric has been added in Census-2023

In the Census-2023, majority of houses 86.60% have reported that their walls are made of baked bricks/ blocks/ stones as compared to 86.80% in Census-2017. The percentage is higher in urban areas 95.60% as compared to 80.35% reported in rural areas in Census-2023. Moreover, the percentage of walls reported as being made of unbaked bricks with mud bonding is 17.79% in rural areas as compared to 3.26% in urban areas.

The use of wood bamboo for construction of walls has decreased slightly from 0.94% in Census-2017 to 0.70% in Census-2023. The categories of Plywood/Cardboard and Pre-Fabric have been included in Census-2023. Nominal housing units have reported these categories I.e., 0.02% and 0.03% respectively.

4.2.6 Construction Material Used for Roofs

The use of material for construction of roofs is also used to assess the living standards and to collect data for appropriate policy making for disasters. Table 4.6 reveals that in Punjab province the highest percentage of material used for roofs is Garder/ T.Iron with 47.74%. The rural areas have predominately higher percentage of housing units i.e. 61.92% which have roofs constructed using Garder/ T.Iron as compared to only 27.32% in urban areas. The second most prominent method used in Punjab for roof is RCC/RBC with 34.03%. This clearly depicts that in urban areas majority i.e. 59.10% houses construction type is RCC/RBC while in rural areas the most prevalent is Garder/T.Iron followed by Wood/Bamboo. Almost 5.19% houses in urban areas are also using Wood/Bamboo as material of construction for roofs. The category of Pre-Fabric has been included in Census-2023 with the share of 0.08%. The data for this category was not available in Census-2017. The use of unspecified material in construction of roofs has decreased from 1.68% in Census-2017 to 0.91% in Census-2023.

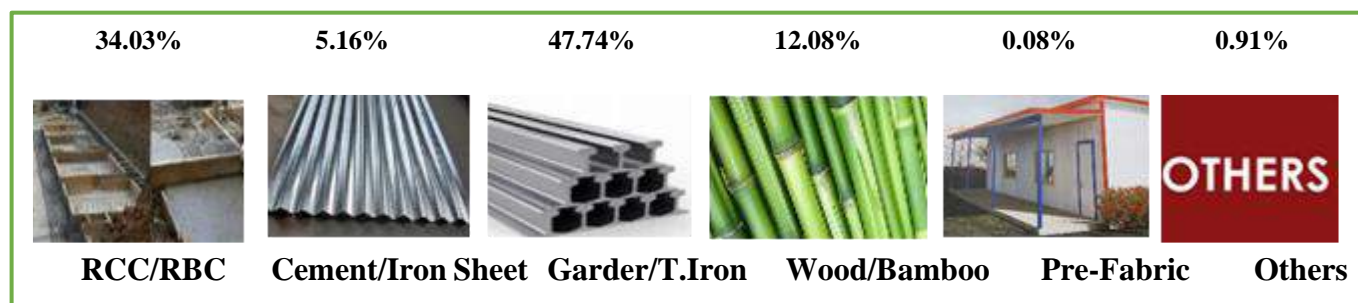


Table 4.6: Number and Percentage of Housing Units by Construction Material Used for Roofs, Census-2017 And 2023

Construction Material		2017			2023		
		All Areas	Rural	Urban	All Areas	Rural	Urban
RCC/RBC	Number	4,877,225	1,366,259	3,510,966	6,750,907	1,947,689	4,803,218
	Percent	28.69	12.85	55.14	34.03	16.63	59.10
Cement/Iron Sheet	Number	714,180	326,845	387,335	1,024,216	409,858	614,358
	Percent	4.20	3.07	6.08	5.16	3.50	7.56
Garder/T. Iron	Number	8,469,998	6,590,636	1,879,362	9,472,130	7,251,721	2,220,409
	Percent	49.82	61.98	29.52	47.74	61.92	27.32
Wood/Bamboo	Number	2,652,058	2,155,842	496,216	2,396,226	1,974,768	421,458
	Percent	15.60	20.28	7.79	12.08	16.86	5.19
Pre-Fabric*	Number	-	-	-	15,726	9,297	6,429
	Percent	-	-	-	0.08	0.08	0.08
Others	Number	286,224	193,107	93,117	180,775	118,979	61,796
	Percent	1.68	1.82	1.46	0.91	1.02	0.76
Number of Households		16,999,685	10,632,689	6,366,996	19,839,980	11,712,312	8,127,668

* Pre-Fabric has been added in Census-2023

4.3 Availability of Facilities in Housing Units

4.3.1 Source of Drinking Water

Easy access to drinking water serves as an index of quality living. In Census 2023, information has been collected from households about the main source of drinking water inside and outside of the housing units. The main categories including Tap Water, Motorized Pump, Hand Pump, Dug Well, Spring, Bottle Water, Filtration Plant and Tanker/Truck/Water bearer. The availability of drinking water through all sources in the province reported in the Census-2017 and Census-2023 are shown in Table 4.7.

Table 4.7 reveals that 71.23% of households in census 2023 reported that their main source of drinking water is inside of the house as compared to 89.60% in 2017. The detailed analysis of data reveals that the percentage of houses with the main source of drinking water outside house in Census 2023 is higher with 28.77 % as compared to 10.40% in 2017, categories wise analysis reveals that this is mainly due to the inclusions of Filtration Plant 10.55%, Tankers 1.54 %, Bottled water 0.85% and Filter. The percentages are highest in urban areas 18.17%, 2.22% and 1.78% respectively mainly due to quality of

water supply at home, which is not suitable for drinking. This shows the diverse trends in the water access and in quality in Urban/Rural areas. The table also reveals that main source used inside the house for drinking water is Electric/Hand Pump with 50.25% followed by Tap Water with 19.66% which has decreased trend as compared to Census 2017 with 25.98%.

Table 4.7: Percentage of Housing Units by Source of Drinking Water and Rural/Urban, Census-2017 And 2023

Source of Drinking Water	2017			2023		
	All Areas	Rural	Urban	All Areas	Rural	Urban
Inside the House	15,231,371	9,579,277	5,652,094	14,131,447	8,887,834	5,243,613
	89.60	90.09	88.77	71.23	75.88	64.52
Tap Water	25.98	21.99	32.65	19.66	18.95	20.69
Electric/Hand Pump	59.82	64.13	52.63	50.25	55.60	42.54
Protected well	0.58	0.66	0.45	0.41	0.46	0.35
Unprotected well	0.21	0.24	0.15	0.02	0.03	0.02
Others	3.00	3.07	2.89	0.87	0.85	0.92
Outside the House	1,768,314	1,053,412	714,902	5,708,533	2,824,478	2,884,055
	10.40	9.91	11.23	28.77	24.12	35.48
Tap Water	2.51	2.43	2.65	5.51	5.78	5.12
Electric/Hand pump	3.51	3.86	2.92	7.44	8.36	6.12
Protected Well	0.24	0.33	0.07	0.37	0.51	0.17
Unprotected well	0.13	0.20	0.02	0.17	0.27	0.03
Bottled Water*	-	-	-	0.85	0.20	1.78
Spring	0.18	0.25	0.06	0.37	0.58	0.08
Canal/River/Pond	0.47	0.50	0.42	0.98	0.91	1.06
Filtration Plant*	-	-	-	10.55	5.26	18.17
Tankers*	-	-	-	1.54	1.07	2.22
Others	3.37	2.34	5.09	1.00	1.19	0.74
Number of Housing Units	16,999,685	10,632,689	6,366,996	19,839,980	11,712,312	8,127,668

*The category "Bottled Water", "Filtration Plant" and "Tanker/Water Bearer" was added in Census-2023.

Figure 4.5 : Housing Units by Drinking Water Inside , Census-2023

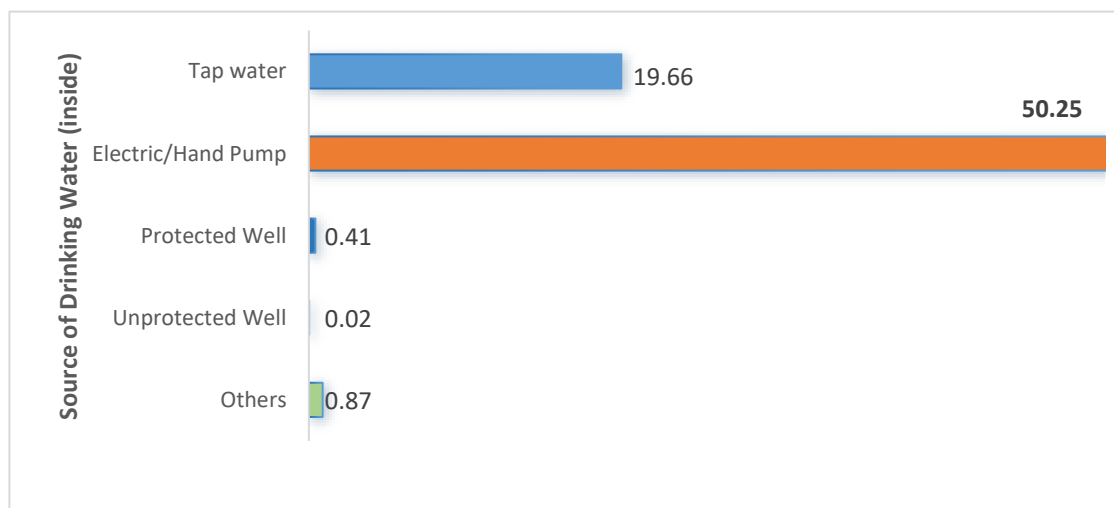
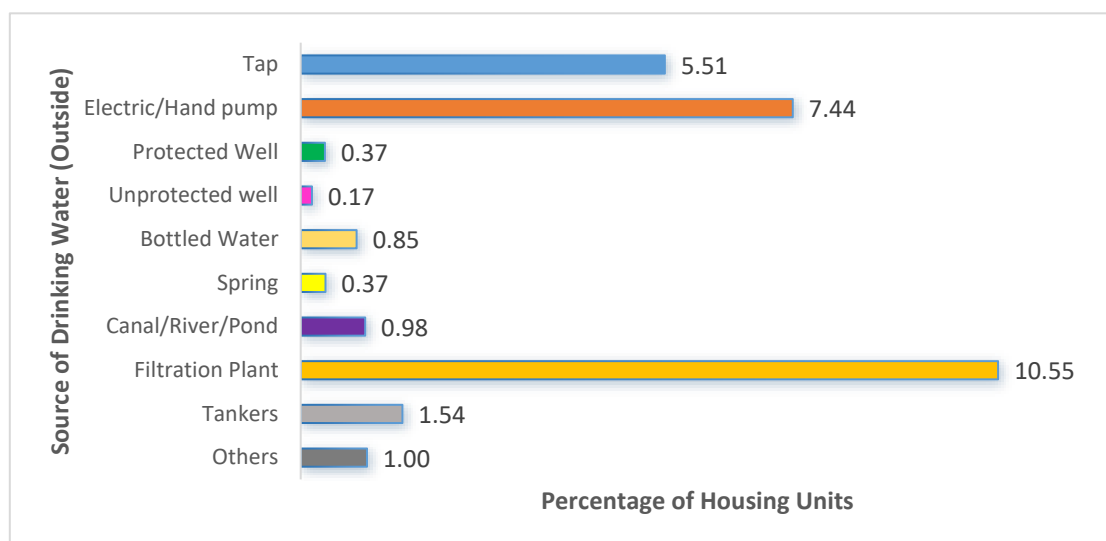


Figure 4.6 : Housing Units by Drinking Water Outside , Census-2023



District Wise Analysis of Drinking Water Facility (inside Home)

The figure 4.7 illustrates the district wise availability of drinking water in districts of Punjab. In Punjab 71.37% housing units have the facility of drinking water within the premises, the remaining 29% are using drinking water from an outside source. Across 36 districts, 22 districts have percentage of availability of drinking water above overall percentage of 71.37 whereas 14 districts falls below the overall percentage.

The percentage of availability of drinking water facility inside house across the districts reveal a diverse distribution.

- **Up to 60.0% Drinking Water percentage (Inside Home):** Only three districts Nankana Sahab (32.24%) Faisalabad (33.25%) and Mandi Bahauddin (57.65%) showing that a significant portion of these districts have drinking water availability percentages within this range, reflecting moderate levels of water scarcity inside home and underscoring the need for targeted interventions to enhance water infrastructure and accessibility.
- **60.1% to 70.0% Drinking Water percentage (Inside Home):** There are 10 districts i.e. Rawalpindi, Sialkot, Khushab, D.G.Khan, Lahore, Sargodha, Toba Tek Singh, Gujrat, Bahawalnagar, and Rahim Yar khan lies between this range indicating relatively better access of drinking water inside homes.
- **70.1% to 80.0% Drinking Water percentage (Inside Home):** There are 11 districts i.e. SheikhuPura, Hafizabad, Sahiwal, Kasur, Okara, RajanPur, Gujranwala, Lodhran, Bahawalpur, Jhelum and Attock in this range, indicating significant advancements in water accessibility, with nearly two-thirds to three-quarters of households enjoying clean drinking water, setting a strong foundation for public health and well-being

- **80.1% to 90.0% Drinking Water percentage (Inside Home):** There are 07 districts i.e. Chakwal, Vehari, Multan, Pakpattan, Mianwali Narowal and Chiniot with drinking water (inside home availability) percentages above 80.1%, achieving this level of access to drinking water facility inside home.
- **90.0% or Above Drinking Water percentage (Inside Home):** There are 05 districts i.e. Khanewal, Jhang, Layyah, Muzaffargarh and Bhakkar with drinking water (inside home availability) percentage above 90%, achieving this high level of access to drinking water facility inside home, demonstrating exceptional success in water infrastructure development.

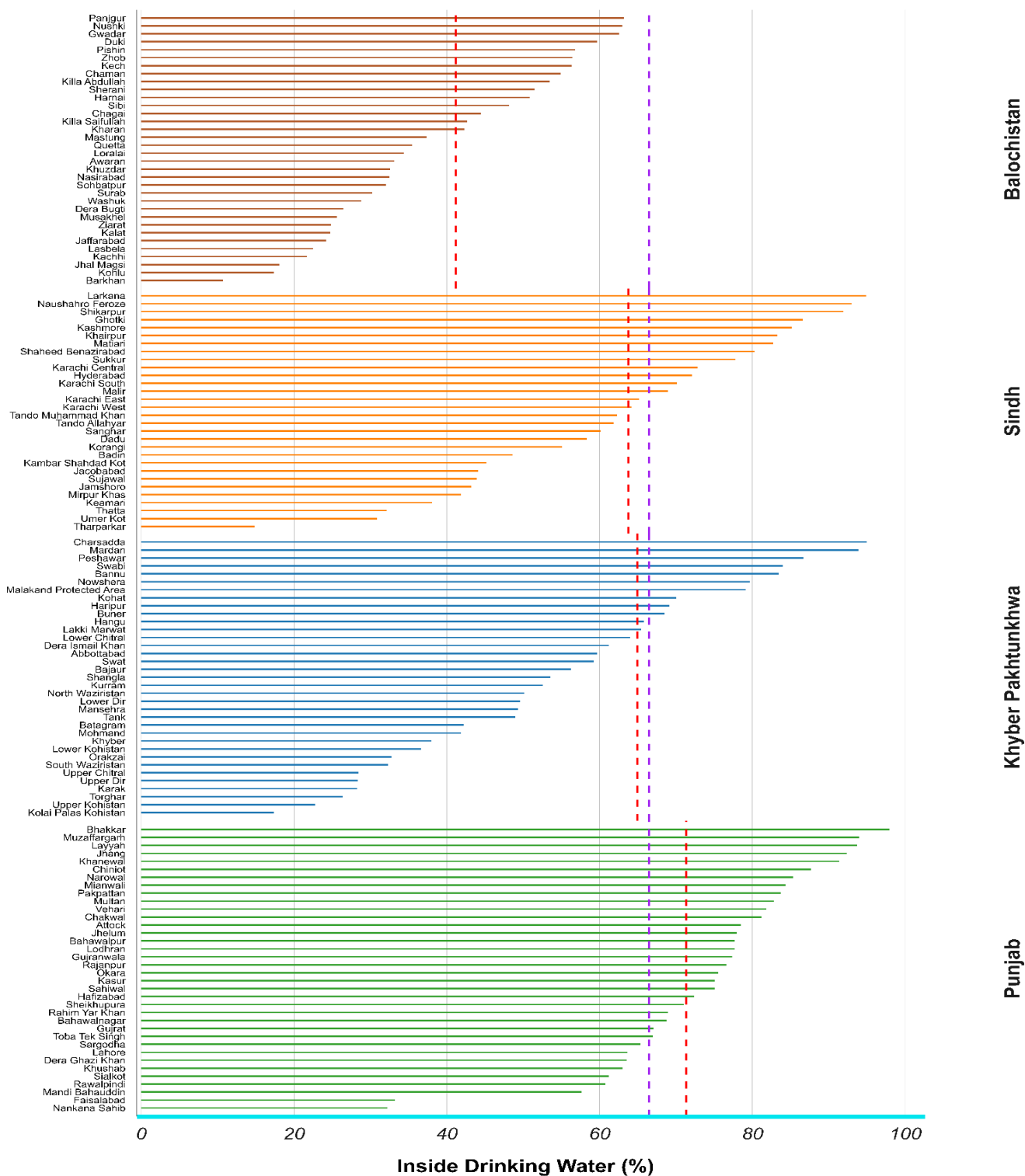
Figure 4.7 : District Wise Drinking Water Facility (Inside Home) Punjab, Census-2023



By analyzing high and low rank district the district with highest percentage of availability of drinking water inside premises includes Bhakkar (97.94%), followed by Muzaffargarh (94.01%) Layyah and Jhang. The district wise drinking water inside the premises comparison is also illustrated in the Figure 4.8, where Punjab province bars are shows in green colour. The Purple and red vertical dashed lines represent national and provincial average of drinking water facility (inside home). Districts bars are shown in descending order with respect to availability of drinking water (inside). The figure also presents the comparison of districts percentages with national average and other provinces. 22 districts, having percentage even higher than national average which is 66.34% are Bhakkar, Muzaffargarh, Layyah, Jhang Khanewal and some others.



Figure 4.8: District Wise Comparison of Drinking Water Facility Inside the Premises



(The purple and red vertical dashed lines represent national and provincial average drinking water inside the house rates, respectively.)

4.3.2 Source of Lighting

In Census 2023 along with other sources, solar panels source is also included to assess the main sources of electricity. Solar energy is environment friendly technology, a great energy supply and one of the most significant renewable and green energy sources. Solar lighting plays a vital role in national development by providing energy access to remote communities, powering essential services like healthcare and education, and reducing reliance on fossil fuels as well as boosts economic growth by creating jobs in the solar industry and reducing energy costs for businesses and households. Additionally, solar lighting enhances energy security, mitigates climate change, and supports sustainable development goals. Electricity is the major source of lighting in the province.

It is observed that 94.95% of housing units all over the province have reported electricity as main source of lighting in Census-2023 shows increasing trends as compared to 93.55% in Census 2017. It seems that in Census 2017 due to the non-availability of Solar panel codes the response regarding solar panels was recorded in electricity, as the difference between electricity and solar panel in 2017 and 2023 is now clearly evident in solar panel along with other usage. The availability of electricity in urban areas is higher with 97.87% as compared to 92.92% in rural areas. The solar panel has shown more usage in rural areas then urban areas with 2.18% and 0.98% respectively, may be due to non-availability of electricity in rural areas.

A significant decline has been observed in the use of Kerosene Oil as a source of lighting which was reported as 2.55% in Census-2017 to 0.64% in Census-2023. This decrease has also been seen in rural and urban areas of the province. Moreover, the percentage of use of other sources of lighting covered under the category of others has also decreased from 3.42% in Census-2017 to 2.68% in Census-2023.

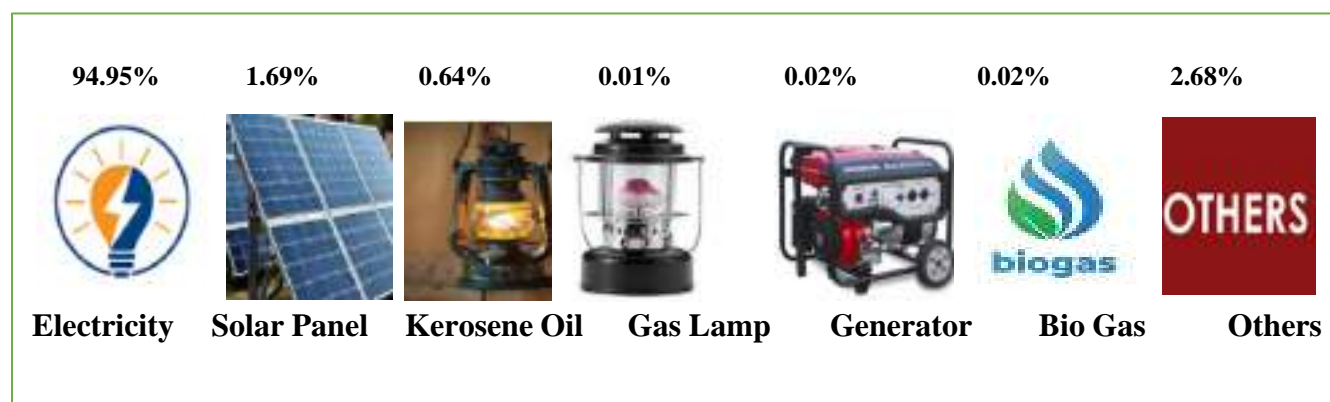


Table 4.8: Percentage of Housing Units by Sources of Lighting and Rural/Urban, Census-2017 and 2023

Source of Lighting		2017			2023		
		All Areas	Rural	Urban	All Areas	Rural	Urban
Electricity	Number	15,971,304	9,699,554	6,271,750	18,838,306	10,883,568	7,954,738
	Percent	93.95	91.22	98.50	94.95	92.92	97.87
Solar Panel*	Number	-	-	-	335,359	255,795	79,564
	Percent	-	-	-	1.69	2.18	0.98
Kerosene Oil	Number	433,999	391,789	42,210	125,987	114,577	11,410
	Percent	2.55	3.68	0.66	0.64	0.98	0.14
Gas Lamp	Number	12,383	9,560	2,793	1,926	637	1,289
	Percent	0.07	0.09	0.04	0.01	0.01	0.02
Generator*	Number	-	-	-	3,499	2,261	1,238
	Percent	-	-	-	0.02	0.02	0.02
Bio Gas*	Number	-	-	-	3,326	2,077	1,249
	Percent	-	-	-	0.02	0.02	0.02
Others	Number	581,999	531,756	50,243	531,577	453,397	78,180
	Percent	3.42	5.00	0.79	2.68	3.87	0.96
Number of Households		16,999,685	10,632,689	6,366,996	19,839,980	11,712,312	8,127,668

*Solar Panel, Generator and Biogas were not included in Census-2023

District Wise Analysis of Electricity

District wise use of electricity has been depicted in the figure 4.9. Electricity as source of lightning in Punjab aims to identify disparities, understand technological challenges, and inform policy decisions to improve electric supply across districts. In Punjab, 94.95% percent of housing units are using Electricity as source for lightning in 2023. The districts with electricity availability percentages higher than the average, are 23 whereas 13 districts have electricity rates under the average. This average provides a baseline for evaluating the equitable distribution of electricity across Punjab's districts.

District-wise electricity rates show a wide disparity. The data, categorized into different electricity to household rate brackets, is as follows:

- **Up to 70.0% Electricity:** Only one district i.e. District Rajan Pur fall into this category, indicating that percentage of electrivity access is only 57% which is very low.
- **80.1% to 90.0% Electricity:** There are 04 districts i.e. D.G.Khan, Layyah, Bhakkar and Khushab in this range, showing moderate use of electricity and suggesting a better electricity scenario compared to the previous category.
- **90.1% or Above Electricity:** There are 31 districts in this category which shows that maximum portion of districts have electricity as a source of lightening, indicating widespread electrification.

Figure 4.9: District Wise Electricity as a Source of Lighting Punjab, Census-2023



While comparing, district Narowal with 98.79% is the top ranked district followed by Gujranwala, Gujrat and Sialkot whereas districts like Rajanapur, D.G.khan, Layyah, Bhakkar, are the lowest in ranking with almost 88% to 58% houses with availability of electricity as main source of light. The districts stand in the low rank owing to many factors like remote and scattered population, scarce resources, inadequate infrastructure, inefficient transmission and distribution of electric supply etc.

4.3.3 Fuel Used for Cooking

In the Census-2023 Firewood with 49.94% has been reported as the major source of fuel used for cooking as shown in Table 4.9. The percentage has declined from 57.85% recorded in Census-2017, however, the use of firewood is much higher in rural areas with 72.80% due to non-availability of environment friendly sources like Natural Gas / LPG. In Pakistan, natural gas is extensively utilized, and this trend is also prevalent in Punjab. Natural Gas is being used by 39.43% of housing units in Census-2023 which has showing increase as compared to 37.92% in 2017. Its share is higher with 73.32% in urban areas as compared to 15.92% in rural areas.

The categories of LPG (Cylinder), Electricity, Biogas and Dung cake have been included in Census-2023 their respective use is very nominal with 5.40%, 0.08%, 0.08%, and 4.34% respectively. The use of other sources of cooking fuel has also decreased from 4.12% reported in Census-2017 to 0.68% in Census-2023.

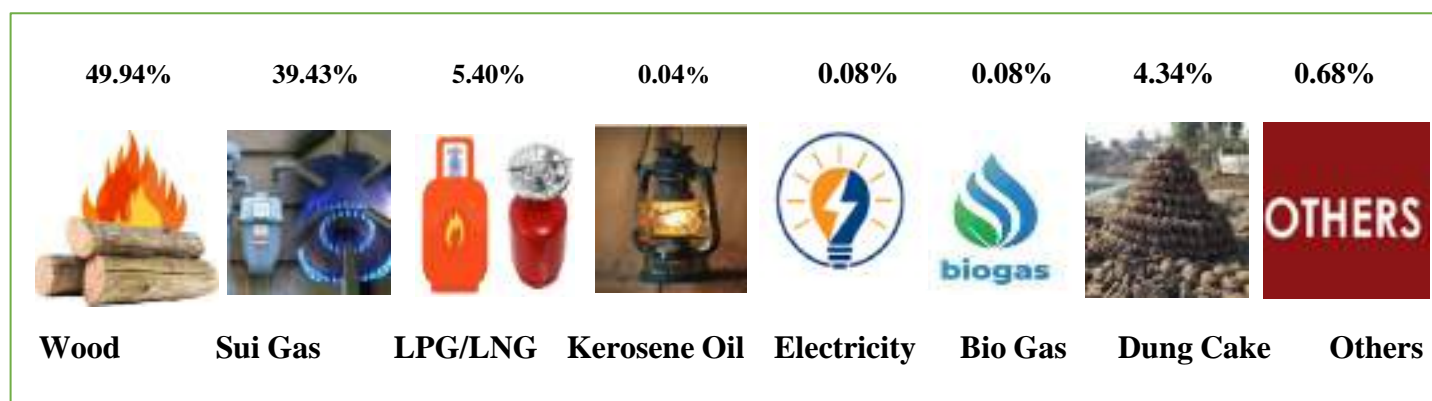


Table 4.9: Percentage of Housing Units by Sources of Cooking Fuel Used and Rural/Urban, Census-2017 and 2023

Cooking Fuel Used		2017			2023		
		All Areas	Rural	Urban	All Areas	Rural	Urban
FireWood	Number	9,835,133	8,580,856	1,254,277	9,908,476	8,526,478	1,381,998
	Percent	57.85	80.70	19.70	49.94	72.80	17.00
Natural Gas	Number	6,445,788	1,588,205	4,857,583	7,823,883	1,865,001	5,958,882
	Percent	37.92	14.94	76.29	39.43	15.92	73.32
LPG (Cylinder)*	Number	-	-	-	1,071,763	425,292	646,471
	Percent	-	-	-	5.40	3.63	7.95
Kerosene Oil	Number	18,396	10,493	7,903	8,390	5,673	2,717
	Percent	0.11	0.10	0.12	0.04	0.10	0.12
Electricity*	Number	-	-	-	16,217	10,366	5,851
	Percent	-	-	-	0.08	0.09	0.07
Bio Gas*	Number	-	-	-	16,616	8,379	8,237
	Percent	-	-	-	0.08	0.07	0.10
Dung Cake*	Number	-	-	-	860,515	793,093	67,422
	Percent	-	-	-	4.34	6.77	0.83
Others	Number	700,368	453,135	247,233	134,120	78,030	56,090
	Percent	4.12	4.26	3.88	0.68	0.67	0.69
Number of Households		16,999,685	10,632,689	6,366,996	19,839,980	11,712,312	8,127,668

* LPG/LNG (Cylinder), Electricity, Biogas and Dung Cake were not included in Census-2017



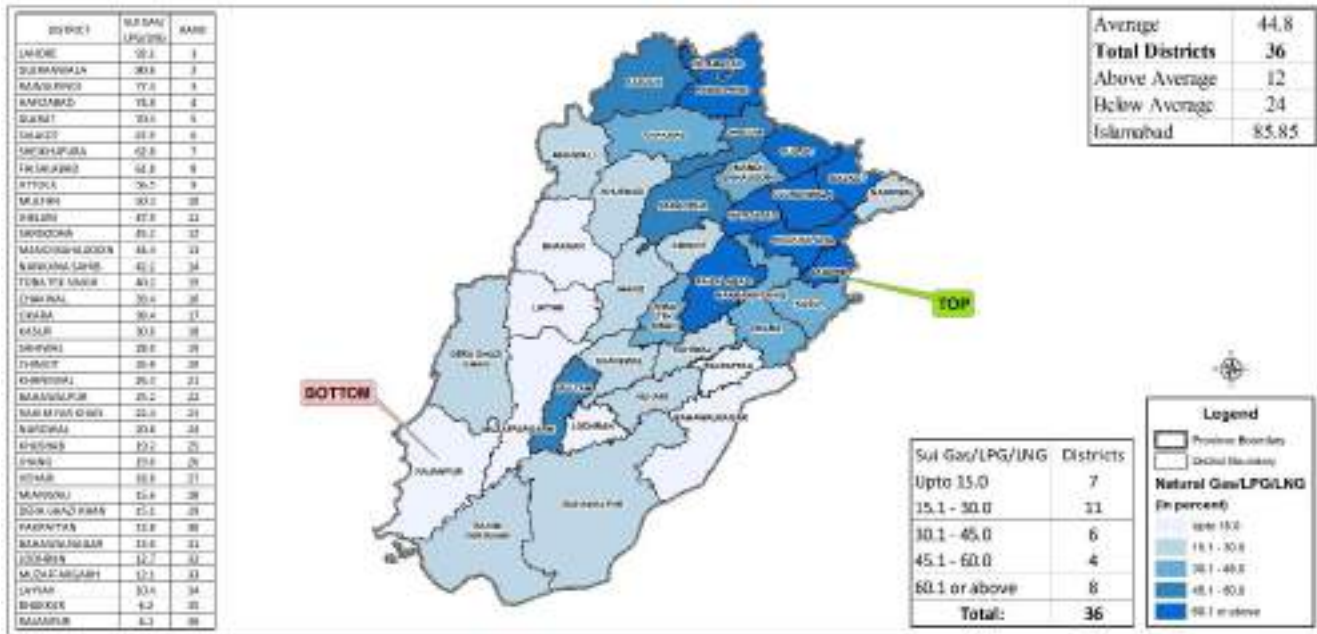
District Wise Analysis of Gas, LPG/LNG

District wise comparison regarding use of Natural Gas / LPG as main fuel for cooking purpose is depicted in Figure 4.10 Use of Natural Gas / LPG for cooking purpose provide an environment friendly solution for sustainable growth. The usage of Natural GAS/LPG is 44.84%, 12 districts surpass this threshold, while 24 districts fall short, highlighting disparities in energy accessibility.

The Natural GAS/LPG percentages across the districts reveal a diverse distribution. The data, categorized into different percentage brackets, is as follows:

- **Up to 15.0% Natural GAS/LPG:** There are 07 districts namely Rajanpur, Bhakkar, Layyah, Muzaffargarh, Lodhran, Bahwalnagar and Pakpattan, where Natural Gas/LPG users' percentage fall into this bracket suggesting a critical need for targeted interventions to improve energy access and infrastructure in these districts.
- **15.1% to 30.0% Natural GAS/LPG:** There are 11 districts namely D.G.Khan, Mianwali, Vehari, Jhang, Khushab, Narowal, RahimYar Khan, Bahawalpur, Khanewal, Chiniot and Sahiwal where GAS/LPG users percentages fall within this moderate range, indicating incremental progress in energy access, but still requiring focused efforts to bridge the gap and achieve universal coverage.
- **30.1% to 45.0% Natural GAS:** There are 06 districts i.e. Kasur, Okara, Chakwal, Toba Tek Singh, Nankana Sahib and Mandi Bahauddin where GAS/LPG percentages fall into this bracket, suggesting significant progress in GAS/LPG adoption.
- **45.1% to 60.0% Natural GAS/LPG:** Only 04 district i.e. Sargodha, Jhelum, Multan and Attock fall within this bracket, indicating higher natural gas adoption percentage and suggesting efficient adoption.
- **60.1% or Above Natural GAS/LPG:** 08 districts namely Faisalabad, Sheikhpura, Sialkot, Gujrat, Hafizabad, Rawalpindi, Gujranwala and Lahore have achieved an impressive GAS/LPG percentage of 60.1% or higher, indicating better access and economic development.

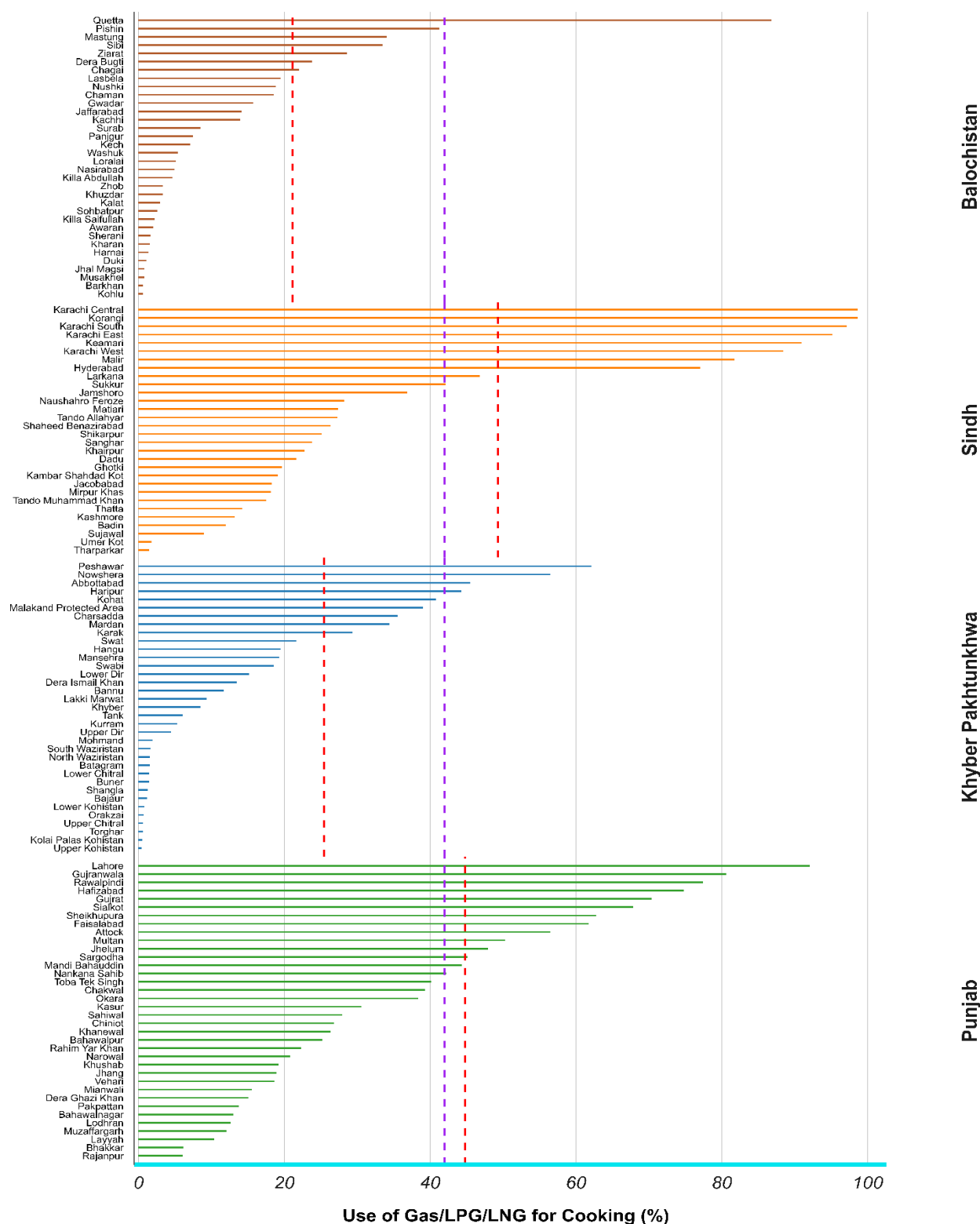
Figure 4.10: District Wise Sui Gas and LPG/LNG Punjab, Census-2023



By analyzing the low ranked districts in terms of percentage of housing units using Natural GAS/LPG, the Lowest Natural Gas/LPG availability percentage has been observed in District Rajanpur with 6.1% and Bhakkar with 6.2% while District Layyah with 10.4% and District Muzaffargarh with 12.1%, have slight better share than Rajanpur and Bhakkar, but still lies at lowest ranked districts in terms of availability / usage of Natural GAS/LPG. Lahore with 92.1% and Gujranwala with 80.60% have the highest percentage of housing units with availability / usage of Natural GAS/LPG. The district wise Natural gas (Sui) / LPG comparison is also illustrated in the Figure 4.11, where Punjab province bars are shows in green color. The Purple and red vertical dashed lines represent national and provincial average of Natural GAS/LPG. Districts bars shown in descending order with respect to out of Sui gas/ Natural Gas / LPG percentages. The graph depicts 13 district of Punjab have percentage higher than even national average of 42.03%. However, certain districts like Rajan Pur, Bhakkar and Layyah have very low percentage of households with GAS/LPG. The performance of these districts is also poor in all other housing indicators.



Figure 4.11: District Wise Comparison of Main Fuel (Gas/LPG/LNG) Used For Cooking



(The purple and red vertical dashed lines represent, respectively, national and provincial average rates for Gas/LPG/LNG used as main fuel for cooking.)



4.3.4 Availability of Kitchen, Bathroom and Toilet Facilities

The information on availability of kitchen, bathroom, and toilet facilities within the premises of the housing units was also collected in the Census-2023 as shown in Table 4.10.

Kitchen: It was found that 62.76% of the housing units in the province have a separate kitchen as reported in Census-2023. Separate kitchen is more prevalent in the urban areas with an occurrence of 75.74% as compared to rural areas where it stands at 53.76%. The facility of shared kitchen is available to 10.74% of the housing units in Census-2023, which has marginally decreased from 14.58% in Census-2017. Moreover, in Census 2023, 26.50% of the housing units have no kitchen facility in the province. In Rural areas, 36.04% of the housing units have no kitchen facility whereas 12.75% housing units in urban areas have no kitchen facility, according to Census 2023.

Bathroom: According to Census-2023, the availability of separate bathroom facility was reported by 71.73% of the total housing units showing an increasing trend from 63.28% in Census-2017. The incidence of separate bathroom is more common in urban areas at 81.51% as compared to rural areas at 64.94%. The shared bathroom facility has decreased from 20.31% in Census-2017 to 14.70% in Census-2023. Shared bathrooms are more common in the housing units of urban areas at 15.43%, as compared to rural areas, where it is found in 13.66% of the housing units. Moreover, 13.57% of the housing units in the province have no bathroom. The prevalence of such housing units is higher in rural areas 19.63% as compared to in urban areas 4.83%.

Toilet: In Census-2017, the availability of toilet facility in housing units was accounted as either the housing unit had separate, shared or no toilet facility and further the options available were that whether the toilet was either connected with sewerage system, connected with septic tank, connected with open drain, pit with slab, other, or none of these options. However, in Census 2023, the breakdown for flush and non-flush toilet were introduced and separate options for flush and non-flush categories were introduced as in flush toilet the options were same as in Census 2017 but the options for non-flush toilet was either connected with dry raised toilet, dry pit toilet and other. It was found that 37.68% of the total housing units reported the availability of toilet connected with sewerage. From rural areas 15.83% of housing units from urban areas 69.16% of housing units have reported the availability of toilet connected with sewerage. Moreover, 19.74% of housing units have reported latrines connected with septic tanks, with the incidence higher in urban areas as compared to rural areas, and 16.30% of housing units have their latrine connected with open drain.

Furthermore, 14.54% housing units reported the latrine facility as pit with slab type with higher incidence in rural areas at 21.65% as compared to urban areas at 4.29%, 0.16% of housing units have reported to use dry raised latrine, 0.17% of housing units reported that they have dry pit latrine and 1.91% of housing units reported their latrine facility to fall under the category 'other'. (Table 4.10).

The term "sanitation" is directly linked with toilet facilities. It encompasses more than just cleanliness; it includes hygiene, the effective collection of liquid and solid waste, and their environmentally responsible disposal. A well-functioning sanitation system acts as a barrier against



fecal diseases by ensuring proper collection and disposal of human waste, while also minimizing the risk of groundwater and distribution system contamination that could pose health risks through drinking water. Sanitation is also a key indicator of the Sustainable Development Goals (SDGs), particularly “Goal 6”.

It may be noted that percentage of housing units reported to have toilet facility is 90.50% in Census-2023 as compared to 86.31% in Census-2017.

Table 4.10: Percentage of Housing Units Having Kitchen, Bathroom and Toilet Facilities and Rural/Urban, Census-2017 And 2023

Housing Facilities	All Areas	2017 Rural	Urban	All Areas	2023 Rural	Urban
Kitchen						
All	100	100	100	100	100	100
Separate	51.83	44.51	64.06	62.76	53.76	75.74
Shared	14.58	12.93	17.33	10.74	10.20	11.50
None	33.59	42.56	18.62	26.50	36.04	12.75
Bathroom						
All	100	100	100	100	100	100
Separate	63.28	55.65	76.01	71.73	64.94	81.51
Shared	20.31	20.04	20.76	14.70	15.43	13.66
None	16.41	24.31	3.23	13.57	19.63	4.83
Toilet	100	100	100	100	100	100
Toilet (Non-Flush)*						
Connected with Sewerage	31.01	10.25	65.69	37.68	15.83	69.16
Connected with Septic Tank	14.43	17.41	9.47	19.74	25.27	11.76
Connected with Open Drain	16.96	19.46	12.80	16.30	19.96	11.03
Pit with Slab	22.59	30.23	9.84	14.54	21.65	4.29
Toilet (Flush)*						
Dry Raised Toilet*	-	-	-	0.16	0.22	0.09
Dry Pit Toilet*	-	-	-	0.17	0.23	0.08
Others	1.31	1.71	0.65	1.91	2.18	1.53
Availability of toilet (Separate & Shared)	86.31	79.05	98.45	90.50	85.35	97.92
None(No Toilet)	13.69	20.95	1.55	9.50	14.65	2.08
Number of Households	16,999,685	10,632,689	6,366,966	19,839,980	11,712,312	8,127,668

* Asked for the first time in Census-2017.



District Wise Analysis of Toilet Facility (Flush)

The toilet facility varies widely within districts. The district wise analysis has been conducted to identify disparities, understand challenges, and inform policy decisions to improve toilet facilities across districts. For purpose of analysis Toilets are categorized into three main types: Flush, Non-Flush, and No Toilet. Flush Toilets are further divided into categories such as: Flush connected to a sewer, Flush connected to a septic tank, Flush connected to a pit, Flush connected to an open drain.

It may be noted that of housing units reported having toilet facility (Separate & shared) is 90.50% in Census-2023 as compared to 86.31% in Census-2017.

District-wise toilet availability percentages in Housing Units show a wide disparity. The toilet availability for housing units includes any of the flush facility. The average toilet availability across 36 districts stands at 88.25%. The districts with toilet facility percentages higher than the average are 18. Whereas, 18 districts fall below the average. This average provides a baseline for evaluating the equitable distribution of toilet across Punjab's Province districts. The data, categorized into different toilet percentages brackets, is as follows:

- **Up to 50.0% Flush Toilet:** All districts in Punjab have more than 50% households with access to flush toilets, indicating better sanitation facilities across the province.
- **50.1% to 65.0% Flush Toilet:** Only 1 district i.e. Rajanpur falls into this category with 57.9%, indicating that in this area, the percentage of toilet availability is comparatively low.
- **65.1% to 80.0 Flush Toilet:** There are 04 districts namely Chiniot, Dera Ghazi Khan, Muzaffargarh and Jhang in this category showing that significant portion of districts with availability of toilet.
- **80.1% or Above Flush Toilet:** There are 31 districts in this category.

Figure 4.12: District Wise Toilet Facility (Flush) Punjab, Census-2023



By analyzing the low ranked districts in terms of percentages of availability of toilets, the Lowest toilet availability percentage has been observed in District Rajapur (57.9%), District Chinnoit (68.9%) has slight better percentage than Rajapur but still lies at lowest ranked districts in terms of availability of Flush Toilet. The district with highest percentage of toilet availability is Gujranwala (96.77%) followed by Sheikhupura (96.07%).

The district wise toilet availability (flush toilet) comparison is also illustrated in the Figure 4.13, where Punjab province bars are shown in green color. The Purple and red vertical dashed lines represent national and provincial average of toilet facility (flush), respectively. Districts bars shown in descending order with respect to percentages of toilet availability.

Punjab leads other provinces in the availability of flush toilet facilities, with 30 districts surpassing the national average 80.61, while 18 districts exceed the provincial average of 88.25%.

Figure 4.13 : District Wise Comparison of Toilet Availability (Flush Toilet)



(The purple and red vertical dashed lines represent national and provincial average inside toilet availability rates, respectively.)

PART - VI
ANNEXURES



Annexure-A House Listing Form-1

المحقق

ساتویں خانہ و مردم شماری

فہرست خانہ جات (نارم-1)

مصنوع اربعہ / شجرہ کی علامت کا نام

محمد الجبلی (اگلی) عطیہ کا ہم

1995

[illegible][illegible][illegible]

فرمانِ خدیوہ کی تعمیل کے لئے، اُن کی نظر رکھی جا رہی تھی۔ - سید کریم

کابل، لمبہ (2) اور نیو یارک، لمبہ (2) میں مقیم رہنے والے محکمہ (2) اور (2) کے سربراہان

[illegible][illegible]



Annexure-A House Listing Form-1I

[illegible]



Annexure-B Census Form

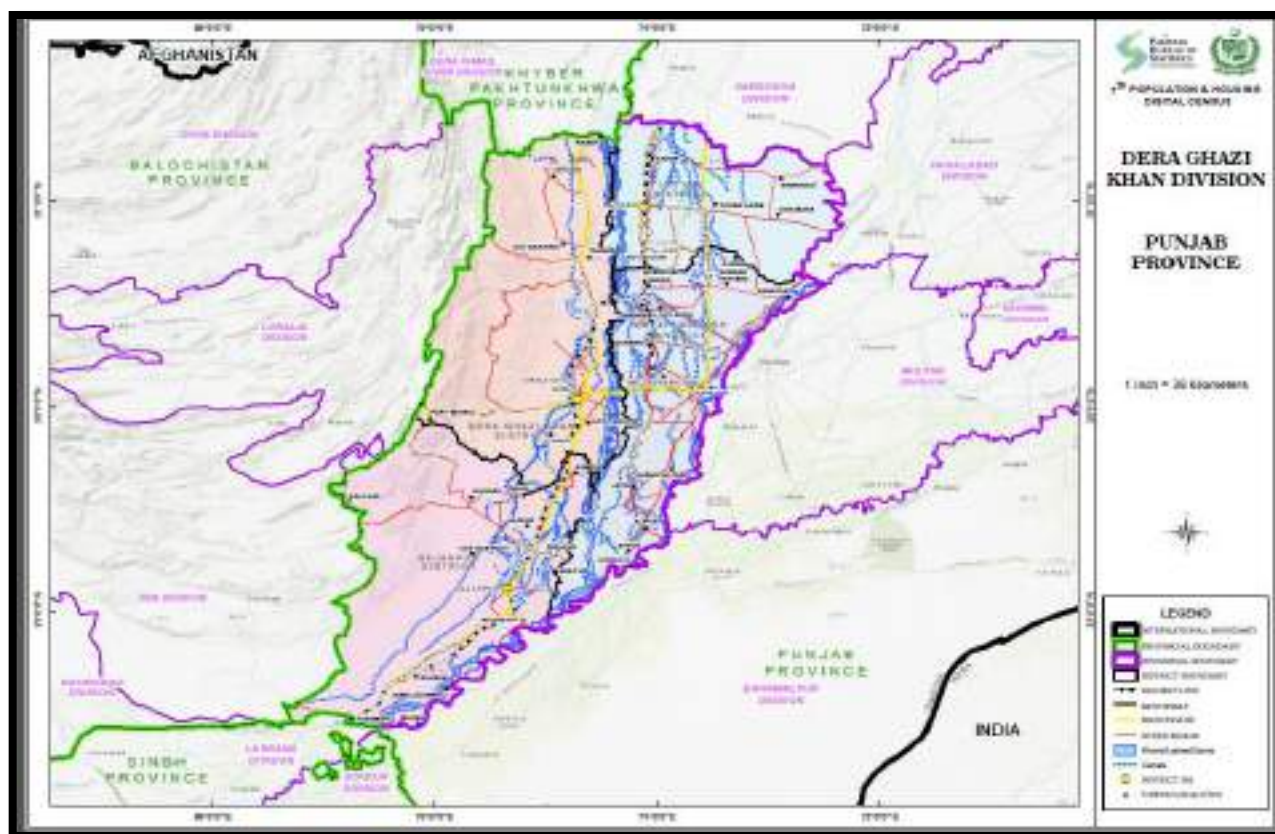
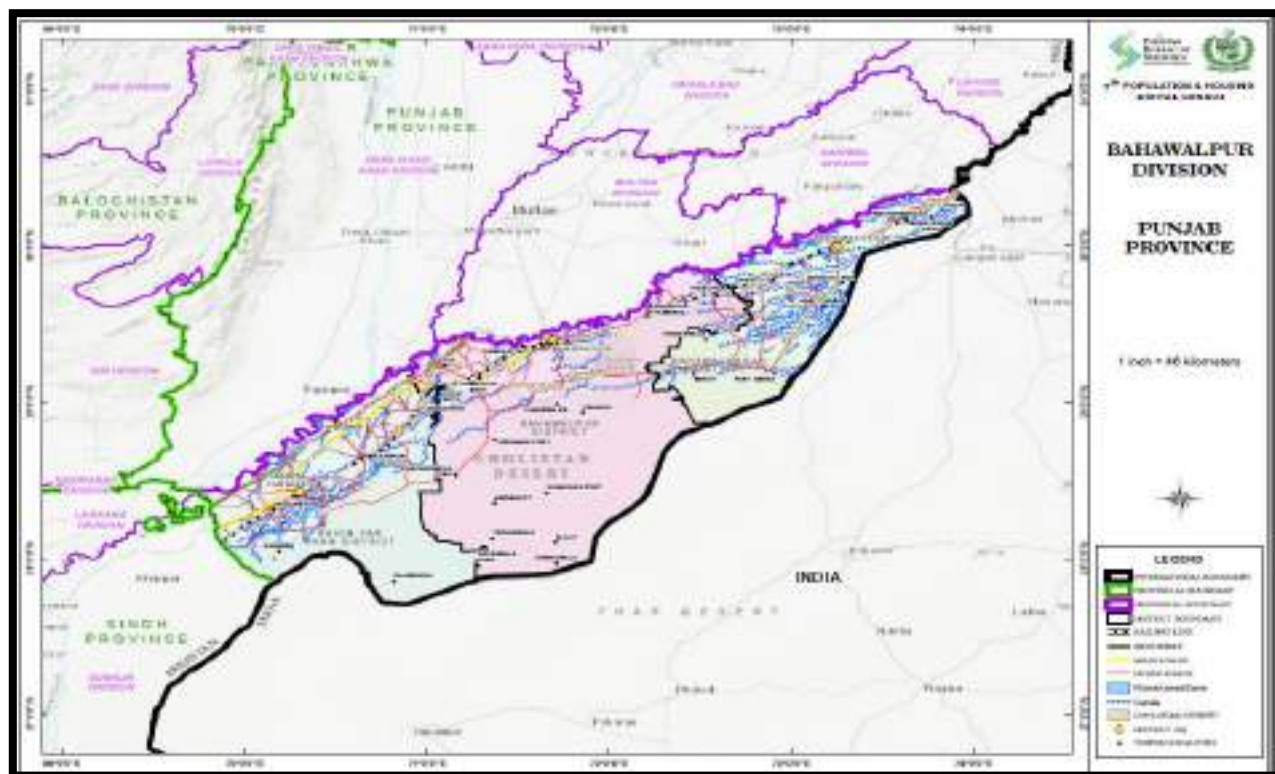
حکومت پاکستان
(Digital Census) **سائبر نائٹ دوم شملی**
پاکستان پاور آف میٹریکس
ادارہ شماریات

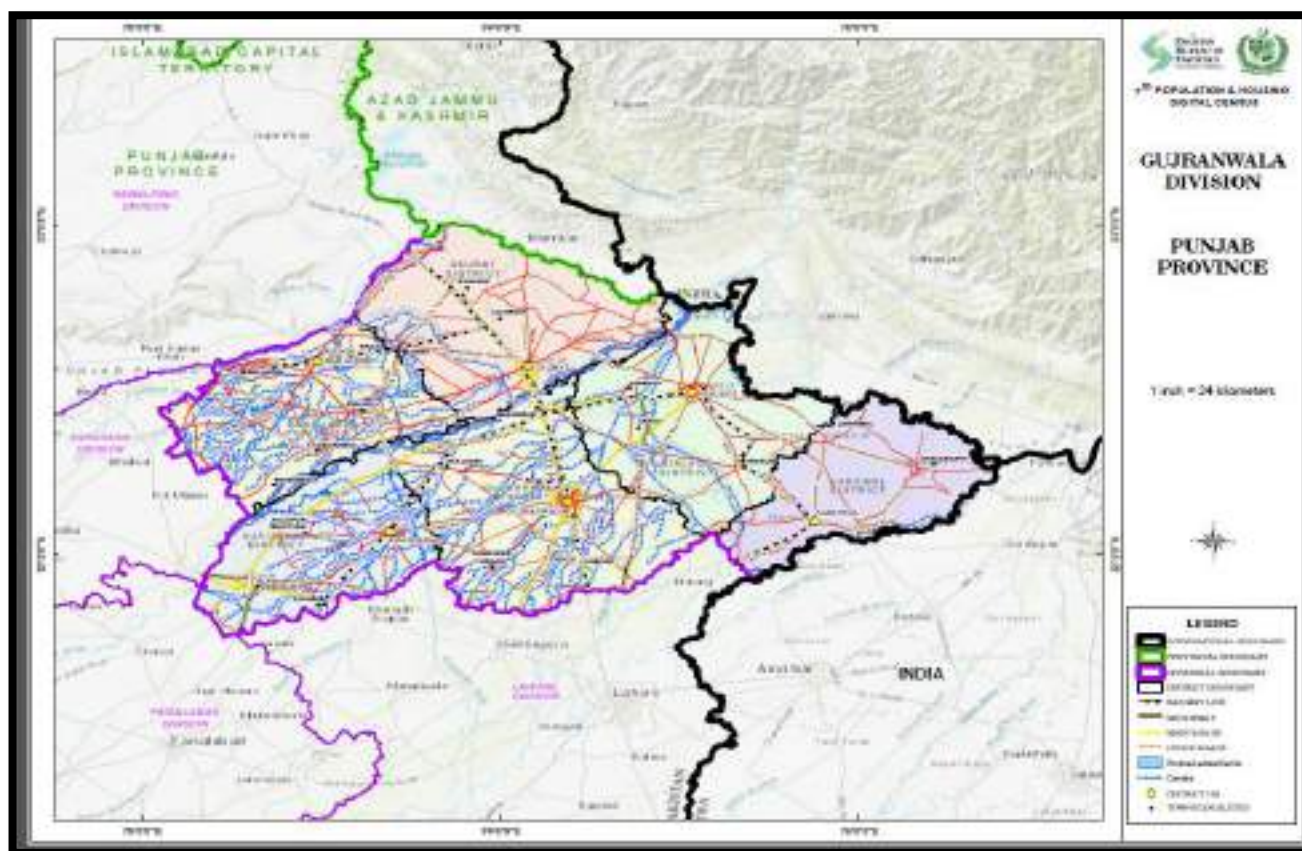
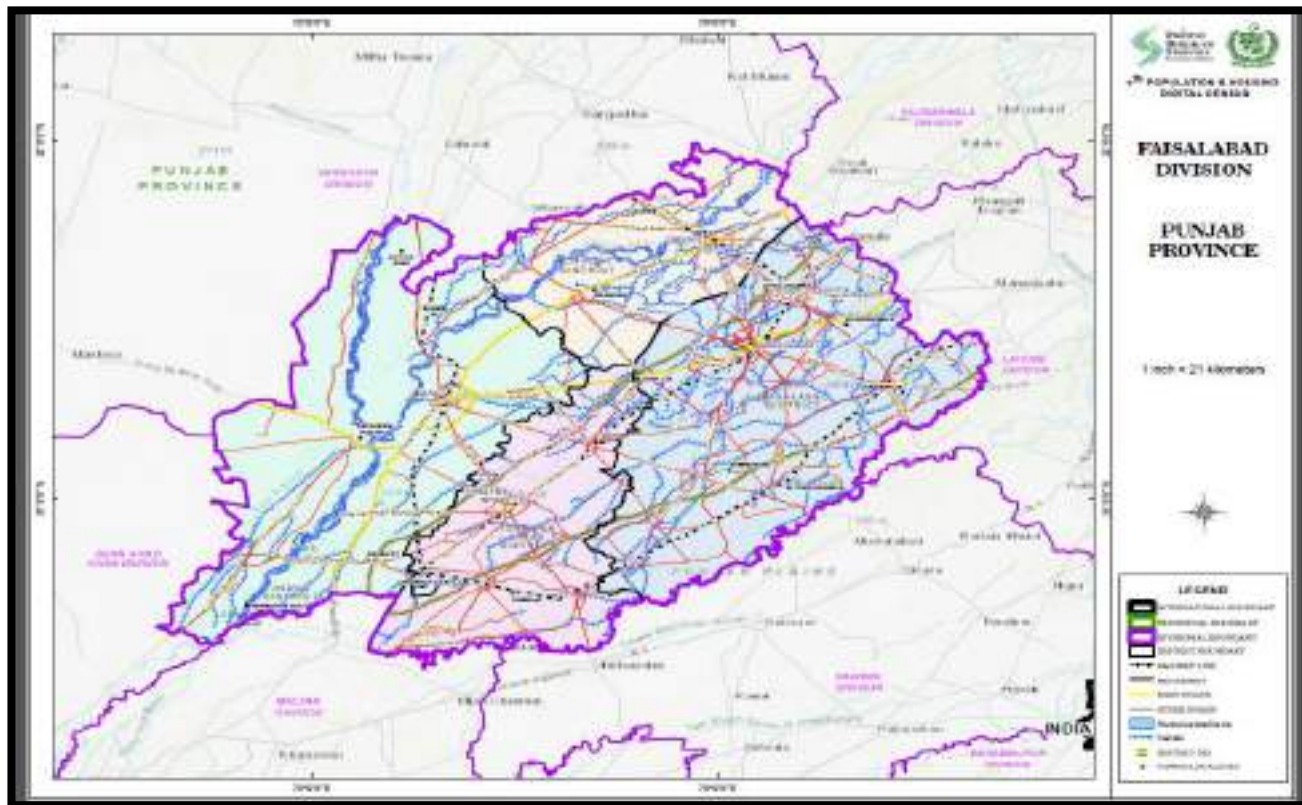
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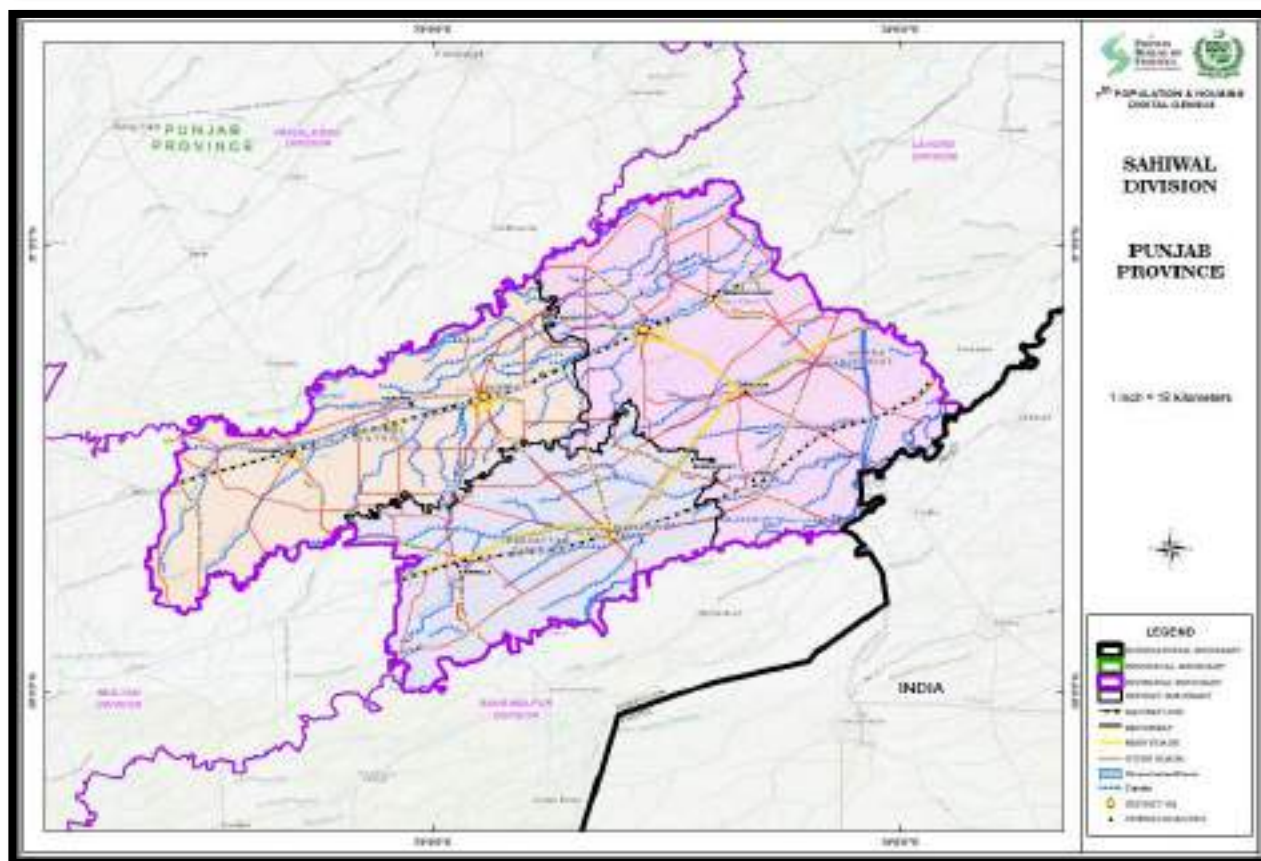
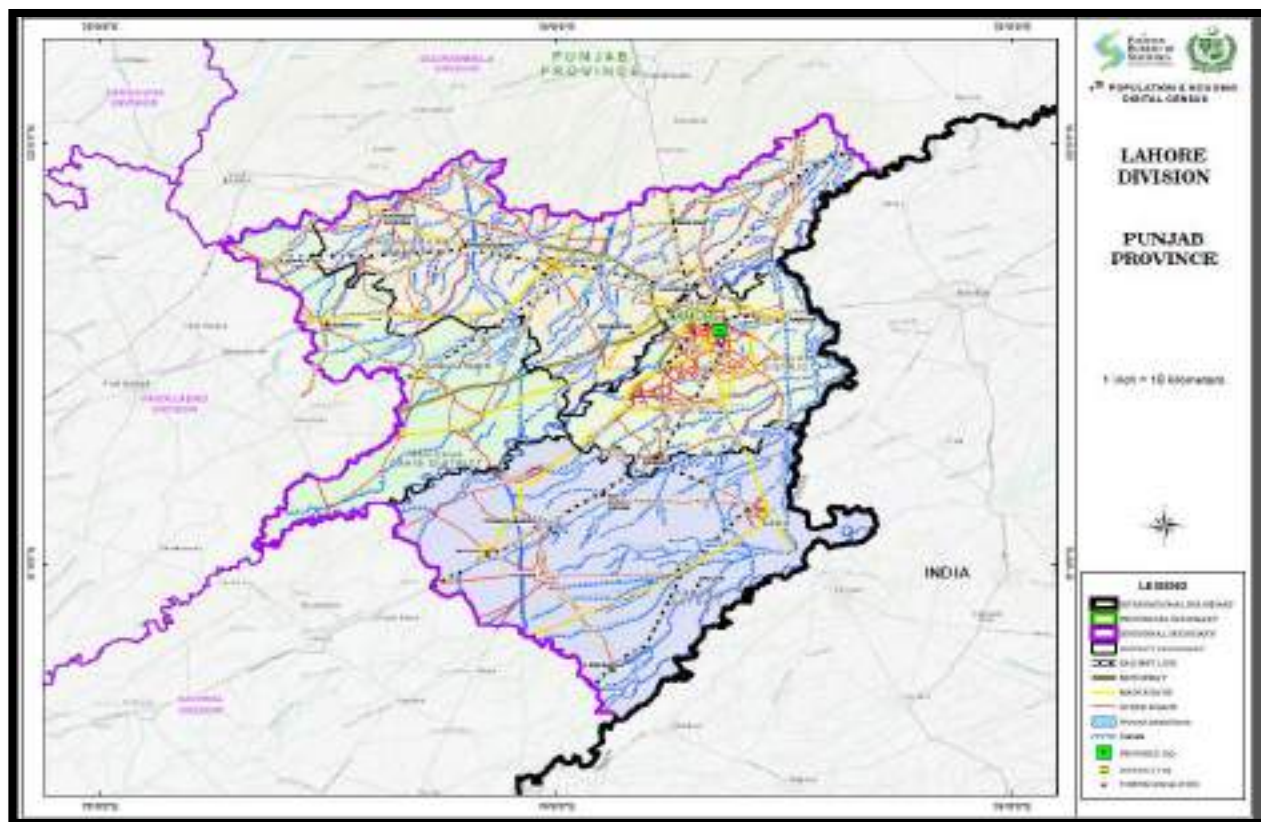
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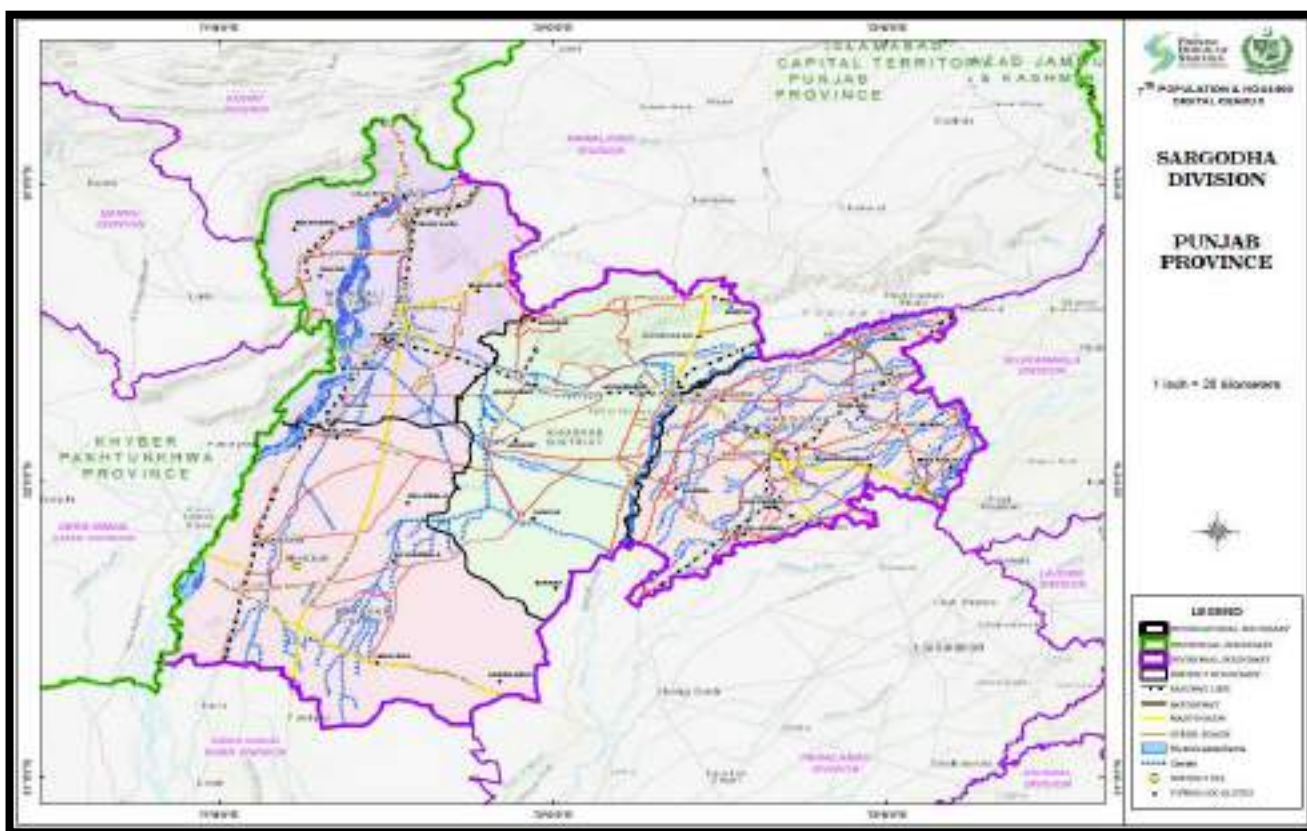
معلومات شخصی				معلومات اجتماعی																																																																																																			
ردیف	نام	تاریخ	جنس	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	نام و نام خانوادگی	تاریخ پیدائش	جنس	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

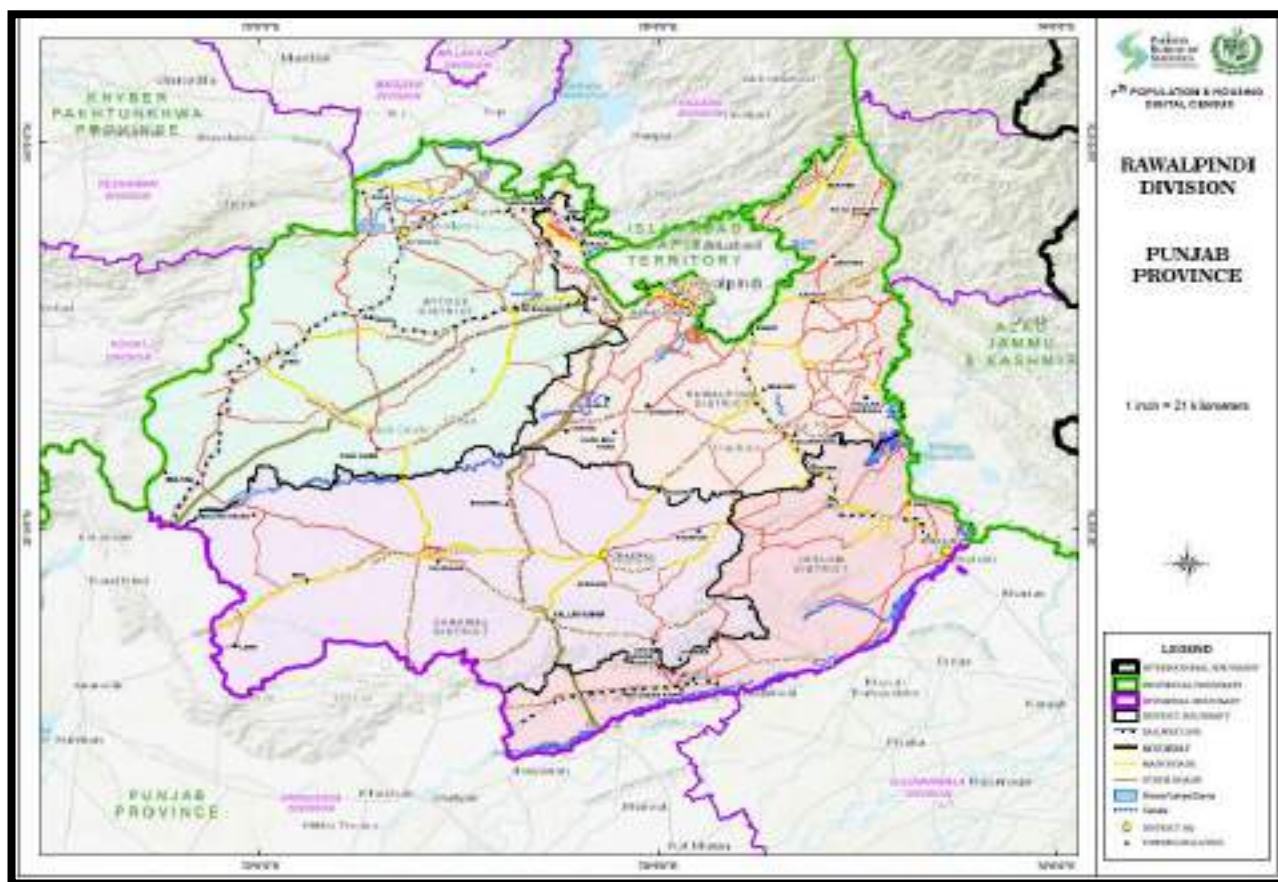
Annexure-C District and Sub-Division Maps













Government of Pakistan
Ministry of Planning Development and Special Initiatives
Pakistan Bureau of Statistics
Mauve Area, G-9/1, Islamabad, Pakistan

