

DISTRICT LEVEL ESTIMATES OF CONTRACEPTIVE PREVALENCE RATE

USING SUPPLIES DATA FOR REALTIME ESTIMATIONS IN SINDH

WHY DISTRICT-LEVEL ESTIMATES MATTER

While administrative data is available at the district and facilities level, they don't show a holistic picture of progress of family planning programs. This policy brief addresses this gap by providing district-level estimates of CPR and mCPR using supplies data that enable assessment of variation and program impact across Sindh.

District-level CPR and modern CPR (mCPR) estimates provide decision-ready evidence that allows provincial planners to move beyond averages and target resources where they are needed most.

KEY RESULTS (2021–2024)

Overall, CPR for the Sindh province is around 29% in 2024 with mCPR or 24%. There appears to be a drop since the point in 2023, than must be explored.

The analysis reveals clear geographic clustering:

- **High-performing districts** - CPR ~36–42%, mCPR ~31–38%. Central Karachi, Korangi Karachi, East Karachi, South Karachi
- **Mid-performing districts** - CPR ~28–32%, mCPR ~23–27%: Hyderabad, Sukkur, Mirpur Khas, Matiari, Khairpur, Umer Kot
- **Low-performing districts** - CPR ~19–24%, mCPR ~14–20%: Kambar Shahdad Kot, Kashmore, Jacobabad, Sujawal, Thatta

KEY MESSAGES

1. Supplies data can be converted to district level CPR and mCPR estimates to track progress of FP programs
2. Higher accuracy of supplies data will enhance the accuracy of the modeled estimated
3. These models can be replicated each quarter to track progress
4. Depictions on real time heatmaps can further enhance the ability to guide programs
5. There are geographic differences in results with the best results around Karachi Hyderabad while northern districts do worse
6. Gains were noted through 2023, followed by stagnation in 2024: Several districts improved modestly until 2023, followed by declines in 2024. These patterns allow points of starting points for inquiry into causes

These differences highlight where intensified outreach, method mix expansion, and supply-side strengthening are most urgently required.

Figure 1: CPR at the District Level

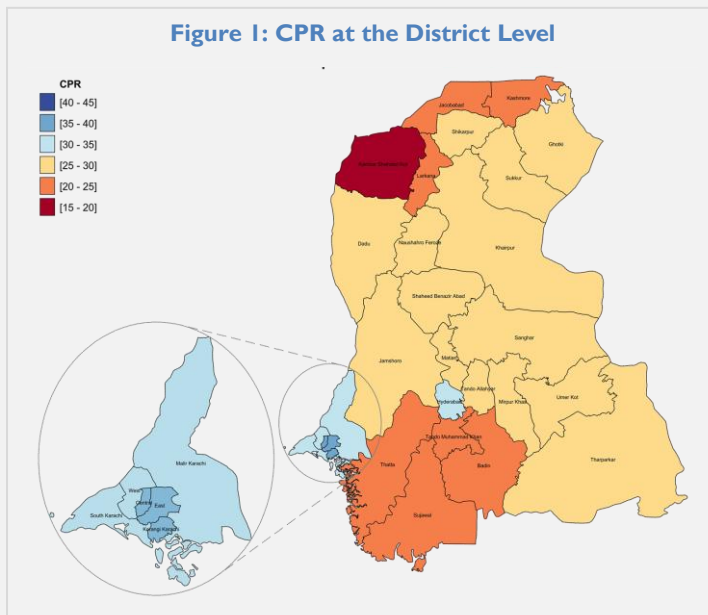


Figure 2: Modern Method CPR at the District Level

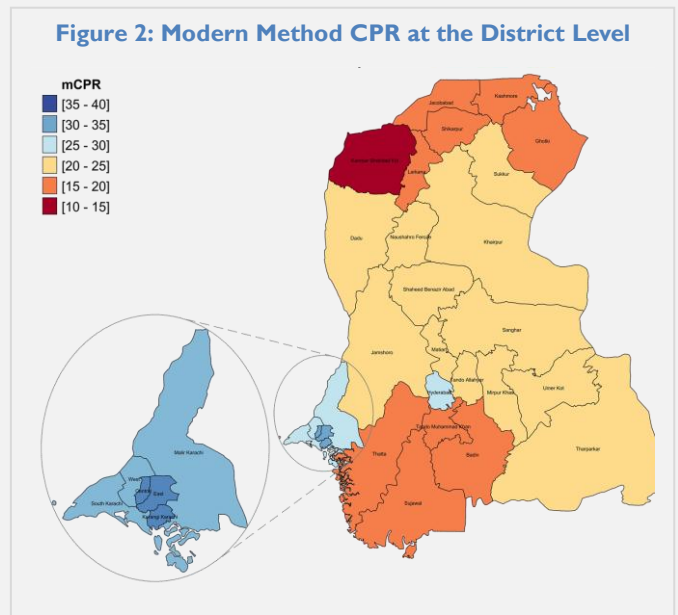


Figure 3: District-wise trend of CPR in Sindh, 2021–2024

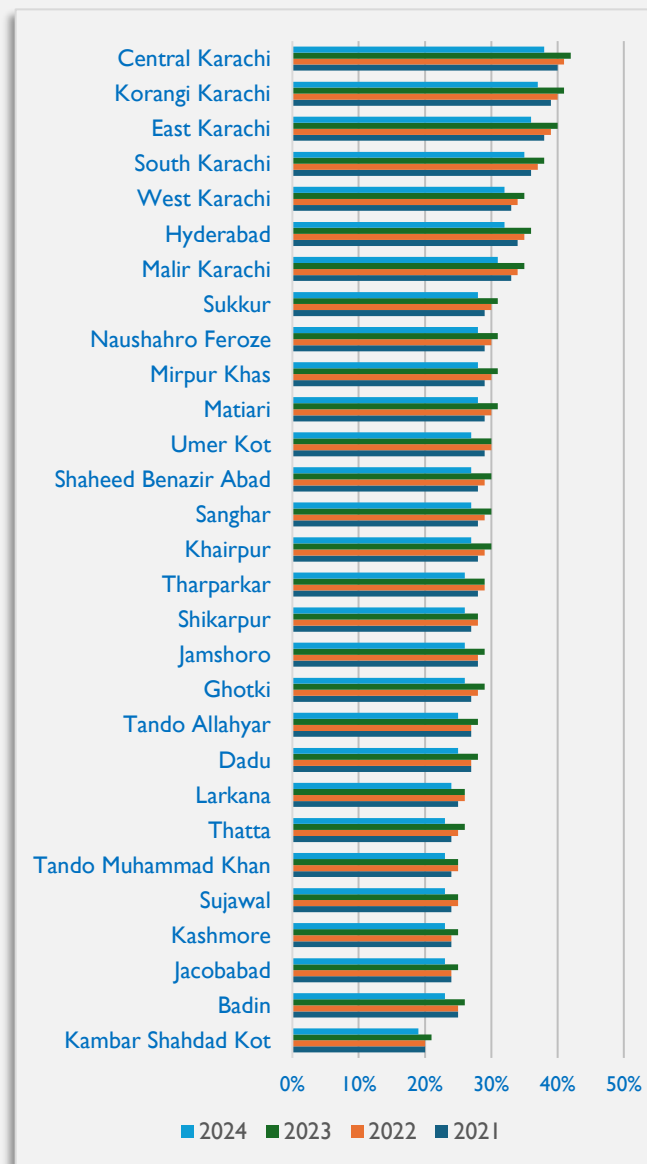
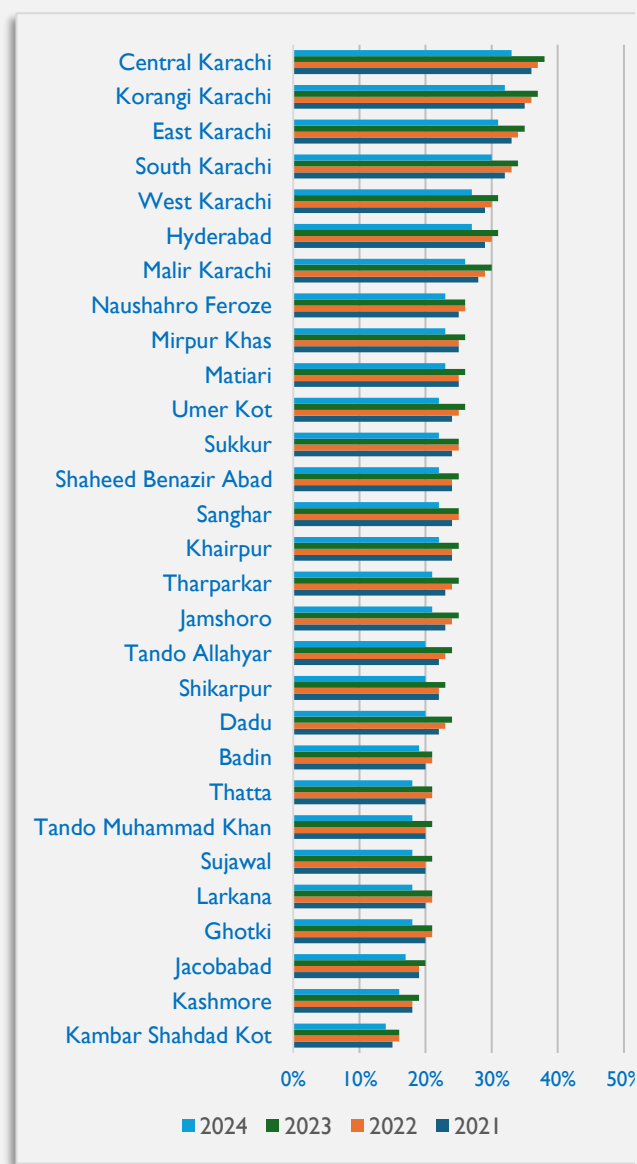


Figure 4: District-wise trend of mCPR in Sindh, 2021–2024



METHODS

- cLMIS data were used for consumption and stocks from 2020-2024.
- Monthly service data were converted into annual measures and adjusted for district population size.
- Used Error correction model with spatial temporal small area estimations.
- The analysis smooths out year-to-year changes and accounts for similarities across neighboring districts to avoid sharp or unrealistic fluctuations.
- Estimates for modern and traditional methods were produced separately and then combined to show total contraceptive use, along with uncertainty ranges.

VALIDATION OF RESULTS

Since the 2020 CPR estimates were validated against provincial benchmarks from the PSLM 2019–20, the 2021–2024 district estimates were compared with the earlier results. The comparison shows a maximum difference of **0.04 points for CPR** and **0.01 for mCPR**, confirming the validity and consistency of the estimates.

REFERENCE:

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SINDH DISTRICT CPR (2021-2024)

	2021	2022	2023	2024		2021	2022	2023	2024
Sindh Provincial	30%	31%	32%	29%	Sindh Provincial	26%	27%	27%	24%
Central Karachi	40%	41%	42%	38%	Central Karachi	36%	37%	38%	33%
Korangi Karachi	39%	40%	41%	37%	Korangi Karachi	35%	36%	37%	32%
East Karachi	38%	39%	40%	36%	East Karachi	33%	34%	35%	31%
South Karachi	36%	37%	38%	35%	South Karachi	32%	33%	34%	30%
Hyderabad	34%	35%	36%	32%	Hyderabad	29%	30%	31%	27%
West Karachi	33%	34%	35%	32%	West Karachi	29%	30%	31%	27%
Malir Karachi	33%	34%	35%	31%	Malir Karachi	28%	29%	30%	26%
Matiari	29%	30%	31%	28%	Matiari	25%	25%	26%	23%
Mirpur Khas	29%	30%	31%	28%	Mirpur Khas	25%	25%	26%	23%
Naushahro Feroze	29%	30%	31%	28%	Naushahro Feroze	25%	26%	26%	23%
Sukkur	29%	30%	31%	28%	Khairpur	24%	24%	25%	22%
Khairpur	28%	29%	30%	27%	Sanghar	24%	25%	25%	22%
Sanghar	28%	29%	30%	27%	Shaheed Benazir Abad	24%	24%	25%	22%
Shaheed Benazir Abad	28%	29%	30%	27%	Sukkur	24%	25%	25%	22%
Umer Kot	29%	30%	30%	27%	Umer Kot	24%	25%	26%	22%
Ghotki	27%	28%	29%	26%	Jamshoro	23%	24%	25%	21%
Jamshoro	28%	28%	29%	26%	Tharparkar	23%	24%	25%	21%
Shikarpur	27%	28%	28%	26%	Dadu	22%	23%	24%	20%
Tharparkar	28%	29%	29%	26%	Shikarpur	22%	22%	23%	20%
Dadu	27%	27%	28%	25%	Tando Allahyar	22%	23%	24%	20%
Tando Allahyar	27%	27%	28%	25%	Badin	20%	21%	21%	19%
Larkana	25%	26%	26%	24%	Ghotki	20%	21%	21%	18%
Badin	25%	25%	26%	23%	Larkana	20%	21%	21%	18%
Jacobabad	24%	24%	25%	23%	Sujawal	20%	20%	21%	18%
Kashmore	24%	24%	25%	23%	Tando Muhammad Khan	20%	20%	21%	18%
Sujawal	24%	25%	25%	23%	Thatta	20%	21%	21%	18%
Tando Muhammad Khan	24%	25%	25%	23%	Jacobabad	19%	19%	20%	17%
Thatta	24%	25%	26%	23%	Kashmore	18%	18%	19%	16%
Kambar Shahdad Kot	20%	20%	21%	19%	Kambar Shahdad Kot	15%	16%	16%	14%