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Modern Contraceptive Prevalence, Unmet Need, and Met Demand for Family Planning for All 75 Districts of Uttar Pradesh State in India: A District Level Analysis with the Family Planning Estimation Tool*

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Abstract

Background: Empowering women to choose timing and number of children is the key to improve her reproductive and overall health. This requires availability of basket of contraceptives to choose from, improving access to contraceptive methods to women for acceptance of long term and short-term family planning methods. To date, efforts to assess progress on this front have been largely limited to the estimation and projection of family planning indicators at the national and state level but they are much needed at the district level, particularly for the most populous state in India with large demographic diversity like Uttar Pradesh. **Methods**: We have used a statistical model that can generate estimates and projections of rates and trends in indicators related to access to reproductive health at the national and subnational levels. For this, Avenir Health has packaged this model in the form of a user-friendly web application, the Family Planning Estimation Tool (FPET), which can be operated by local stakeholders with little external support. We present annual estimates and projections of rates and trends in the modern contraceptive prevalence rate, unmet need, and met demand for modern family planning methods for Uttar Pradesh state and all its 75 districts from 1991 to 2025 produced with FPET. **Findings**: There is a large amount of heterogeneity between the districts; only six districts have high modern contraceptive prevalence rate

*Key Message: It is hoped that the analysis presented here will be helpful to planners and implementers of family planning program in Uttar Pradesh, India.

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(mCPR > 50%) and are likely to reach met demand with a modern contraception of more than 70 percent by 2025 whereas Uttar Pradesh will reach 57.5 percent by 2025. Two districts out of 75 districts are likely to reach met demand with a modern method greater than 74 percent by 2025. Indeed, based on the increase in the modern contraceptive rate needed to achieve 74 percent or more demand satisfied with modern methods by 2025, three districts, namely, Balrampur, Basti and Shrawasti should be prioritized as these districts are at the bottom of the table with less than 20 percent of mCPR in 2020, and need additional support to increase needed modern contraceptive users, Uttar Pradesh demands most attention with a more than 4.5 million additional users of modern contraceptives required from 2015. **Interpretation**: The identification of districts that are performing better or worse helps decentralized planning effectively. The analysis can be generalized to other states and districts as well as other types of population subgroups. This can be done easily using FPET.

Keywords

FPET, mCPR, RMNCH + A, DHS, NFHS, MICS, MPV, AD

1. Background

1.1. Introduction

In India, family planning services are part of larger Reproductive, Maternal, Newborn, Child plus Adolescent Health (RMNCH + A) strategy, which is central to the achievement of national health goals under the National Health Mission (NHM) and Sustainable Development Goal (SDG3). RMNCH + A approach has been launched in 2013 and it essentially looks to address the major causes of morbidity and mortality among women and children as well as the delays in accessing and utilizing health care and services. The RMNCH + A strategic approach has been developed to provide an understanding of "continuum of care" to ensure equal focus on various life stages. Priority interventions for each thematic area have been included in this to ensure that the linkages between them are contextualized to the same and consecutive life stage. The RMNCH + A appropriately directs the States to focus their efforts on the most vulnerable population and marginalized groups in the country. Two more strategic approaches have been introduced in due course of time namely, Mission Parivar Vikas[1] (MPV) in 2016 by the Ministry of Health and Family Welfare (MoHFW) and Aspirational Districts[2] (AD) programme in 2018 by NITI Aayog. MPV programme focuses on districts of 7 states with total fertility rates (TFRs) ≥ 3 to reach replacement level fertility goal of 2.1 by 2025. It has identified 146 high focus districts

[1]The main objective of Mission Parivar Vikas is to accelerate access to high quality family planning choices based on information, reliable services, and supplies within a right-based approach. http://www.nhmmp.gov.in/WebContent/FW/Scheme/Scheme2017/Mission_Parivar_Vikas.pdf.

[2]More about AD program by NITI Aayog is available on http://www.niti.gov.in/about-aspirational-districts-programme

for improved family planning programs. While AD programme aims to improve people's ability to participate fully in the burgeoning economy, health & nutrition, education, agriculture & water resources, financial inclusion & skill development, and basic infrastructure in 117 selected districts across the country. The two new strategic approaches clearly envisage Government of India's focus to shift to smaller administrative units like districts while implementing various health and developmental programs unlike earlier where larger administrative units like states were the focal points.

Reproductive health is intricately linked to the issues of woman and child health, the spread of sexually transmitted diseases, poverty, education, gender equality and human rights (United Nations Population Division, 1995). Improving access to reproductive health is thus central to the process of development, as reflected in the Millennium Development Goal 5 (MDG5) to achieve universal access to reproductive health by 2015 (United Nations, 2015). To track progress towards these goals, the United Nations Population Division (UNPD) publishes estimates and projections of contraceptive prevalence rates and unmet need for family planning at the global, regional, and country level every 2 years (UNPD, 2015). With the expiry of MDG5, there has been interest in setting targets around the indicators of modern contraceptive prevalence, unmet need for modern contraceptive methods and demand met by modern contraceptive methods for the post-2015 global development agenda in recent literature (Brown et al., 2014; Fabic et al., 2014, FP2020, 2014). In 2015, 17 SDGs were adopted by all United Nations Member States as a universal call to end poverty, protect the planet and ensure all the people enjoy peace and prosperity by 2030 (UNPD). Goals related to health and wellbeing were integrated in SDG3 with specific focus on ensuring universal access to sexual and reproductive health care services, including family planning services, information and education, and the integration of reproductive health into national strategies and programs subsumed into sub indicator 3.7.

In 2019, UNPD estimated that the percentage of women of reproductive age that are married or in union who are practicing any modern contraceptive method in India stands at 49.7 percent as opposed to 35 percent in 1990 and in absolute numbers, this translates to more than a doubling of women on modern contraceptive methods from 56.2 million in 1990 to 128.8 million in 2019 (UNPD, 2019). The unmet need for modern methods has fallen from 20.6 percent (32.9 million women) in 1990 to 17 percent (44.1 million women) in 2019, while the demand for family planning satisfied with modern methods has risen from 57.4 percent to 68.2 percent in the same period. This looks like progress however, such national figures mask disparities at smaller administrative units, especially in a country like India where high demographic diversity exists.

Uttar Pradesh is the largest state in India with a population of 199.81 million people (Census of India, 2011) covering 7.3 percent of country's land area. Administratively the state has 75 districts, and its sheer population size attracts attention of professionals from different streams to estimate different health pa-

rameters and propose strategies for the state. While considering the progress of key family planning indicators in the state of Uttar Pradesh, it can be observed that as per NFHS-4 (2015-16), 31.7 percent of women of reproductive age that are married or in union are using modern contraceptive methods as opposed to 18.5 percent in 1992 (NFHS-1) in the state. In absolute numbers, this translates to more than two-and-half times increase in number of women using modern contraceptive methods from 4.57 million in 1992 to 11.54 million in 2015; in other words, the state contributes only one in eleven modern family planning users of the country even though one-sixth of country's population resides in the state. The unmet need for modern family planning methods has fallen from 29.1 percent in 1992 to 18.1 percent in 2015, while the demand for family planning satisfied with modern methods has increased from 37 percent to 56.7 percent in the same period in the state. When compared with India's progress in key family planning indicators as explained before, the progress made by the state of Uttar Pradesh is quite modest which shows the disparity in terms of progress in contraceptive behavior exists in the country. Similar huge difference in contraceptive behavior can be observed within the state of Uttar Pradesh (districts) as mCPR measured by NFHS-4 vary between 2.7 percent in Balrampur district and 59.2 percent in Lalitpur district. Due to wide variations in mCPR and also in unmet need and demand satisfied within the districts of the state, all 75 districts have been included in the study.

It is thus important to have the ability to track progress towards the target at more and more low geographical levels from national to provincial (state) and to sub-provincial (district). Such subgroups can be defined geographically (e.g., states, urban/rural residence, districts) or based on socioeconomic factors (e.g., household wealth quintiles, religion, caste). This shift in emphasis from national assessments and targets to sub-national ones is particularly pertinent considering the equity focus on the SDG agenda. Additionally, it is also crucial to empower stakeholders at state and district levels to take agency in planning, monitoring and evaluation at local level, which is only possible if they understand the heterogeneity and have the capability to generate the relevant estimates and projections of indicators of access to reproductive health with little external support. SDGs have provided a global development framework for expanding the progress achieved through the MDGs with the motto of "no one leaves behind", which recommends disaggregating data according to income, sex, age, race, ethnicity, migration status, disability, geographic locations, and other relevant dimensions (ADB, 2020). An appropriate Small Area Estimation (SAE) technique through which it is possible to estimate key family planning indicators at district level.

To our knowledge, previous studies related to the analysis of rates and trends in family planning indicators for states/union territories (UTs) in India, have mainly relied on state/UT level observations available from household surveys (e.g., Kumar & Singh, 2013; Jain & Jain, 2010). In this paper, we present a us-

er-friendly web application, the Family Planning Estimation Tool (FPET)[3], which can achieve the afore mentioned purpose of state and district level monitoring at the local level and provide an annual series of estimates and projections of rates and trends in indicators of use of contraceptive, unmet need and met demand for family planning at the state and district level in largest populous state in India i.e., Uttar Pradesh from 1991 to 2025 produced with FPET. A previous attempt to estimate these indicators using FPET for India and 29 States & Union Territories was carried out and published in the Lancet (New et al., 2017).

1.2. Study Objective

In view of the recent advancement in the FPET methodologies (Cahill et al., 2018; Wheldon et al., 2018; and United Nations Population Division, 2019), it has been proposed to conduct small area estimation (SAE) and projection of three key family planning indicators for all the districts of the state Uttar Pradesh in India. FPET now allowed to produce either national or subnational estimates depending on what data is entered into the tool (Track20, http://www.track20.org/pages/track20_tools/FPET.php). Since the availability of input data is ensured for all the 75 districts of Uttar Pradesh state, we tried to estimate and project three key family planning indicators -contraceptive prevalence of modern methods (mCPR), unmet need and met demand for all the 75 districts of the state using FPET in this paper.

2. Methods

2.1. State Selection

This study selected the state of Uttar Pradesh and all its 75 districts to meet two strategic decisions, 1) the state has considerable impact in achieving India's ambitious SDGs and 2) the state is technically supported by the Bill & Melinda Gates Foundation (BMGF). As described earlier, the state's progress in family planning is disproportionately diverse among districts. To ensure more equitable progress among districts, it is necessary to estimate the district wise family planning indicators and know the list of districts that are not performing well, which helps to focus the family planning programme.

2.2. Data

The contraceptive prevalence rate is defined as the percentage of women currently using any contraceptive method, while the modern contraceptive prevalence rate is the same but limited to women using any modern contraceptive method, including sterilization (male & female), injectables, intrauterine devices (IUDs/PPIUDs), contraceptive pills, implants, condoms (male & female), diaphragm, foam/jelly, the standard days method, lactational amenorrhea method,

[3]FPET is a web-based application available at http://fpet.track20.org that allows users to generate, view and compare national and subnational estimates and projections of family planning indicators. This tool was launched under the auspices of the Track20 Project to monitor progress towards the attainment of the goals of the global FP2020 initiative (See Annexure-1 for more information).

and emergency contraception. The unmet need for family planning is defined as the percentage of women who do not want any more children or want to delay the birth of the next child and yet are not using any contraceptive method. Demand for family planning satisfied with modern methods is defined as the percentage of women who use modern contraceptive methods divided by total demand for family planning, where total demand is the sum of total contraceptive prevalence and unmet need for family planning. All these indicators are restricted to women of reproductive age who are married or in union in this paper to align with the Indian context.

The database for this study comprises observations of the family planning indicators like contraceptive prevalence rate and unmet need for family planning as well as estimates of the number of the base population of women for the state of Uttar Pradesh and its 75 districts. Values of these indicators for the state of Uttar Pradesh have been obtained from household surveys for the state and districts, specifically multiple rounds of the District Level Household & Facility Survey (DLHS), Annual Health Survey (AHS) and Demographic and Health Survey (DHS) (also known as the National Family Health Survey (NFHS)) conducted between 1992-93 and 2015-16. For district level indicators, contraceptive prevalence rate and unmet need for family planning has been taken from three rounds of DLHS from 1998-99 to 2012-13, three rounds of AHS from 2010-11 to 2012-13 and NFHS-4 during 2015-16.There are 483 (473 district level and 10 state level for Uttar Pradesh state) observations each of the total contraceptive prevalence rate, modern contraceptive prevalence rate and the unmet need for family planning from 1992-93 to 2015-16 from a total of 10 multiple rounds of different surveys listed above, as summarized in **Table A1** and **Table A2** (Annexure A) available as input data for FPET. The base population of women refers to women of reproductive age who are married or in union (MWRA). The projections of MWRA numbers for Uttar Pradesh were obtained from the report published by the National Commission on Population (2020). District projections of MWRA for 75 districts were proportionately allocated from the state projections using the proportion of MWRA obtained from Censuses 1991, 2001 and 2011 for each district.

By combining insights from population surveys and historical trends, FPET provides annual estimates of mCPR, unmet need and demand satisfied for family planning satisfied by modern methods between surveys and builds futuristic scenarios to help countries track progress and inform future programming needs. The most advanced version of FPET also estimates these key family planning indicators separately for all women and women in union/married with three different sets of confidence intervals.

2.3. Research Process

Subnational level data on family planning in India are primarily available from surveys. We searched PubMed and Scopus using a combination of text terms and subject headings, and open-ended search dates. We did not find studies that

produced model-based estimates and projections at district level. Previous studies related to the analysis of rates and trends in family planning indicators at the subnational level states/union territories (UTs) in India have mainly relied on direct reporting of the survey results (Kumar & Singh, 2013; Jain & Jain, 2010). The current study is one of the first attempts in this direction.

Selection of FPET to conduct the analysis was naturally inspired as previous studies (Alkema et al., 2013; Cahill et al., 2018; Guranich et al., 2021) have shown that it brings reliable estimates of key family planning indicators at national and subnational levels. In the subnational implementation of the local FPET, each geography is considered as a separate "entity" within the subregion of its respective nation. For example, in district level implementation, districts are considered as countries within the subregion of India and consider model parameters as applicable. Since the FPET package automated to do these processes we as users of this tool are not typically face any issues. Further details of this tool and its functionalities are discussed in the following section.

2.4. Statistical Analysis

Statistical model for subnational estimates and projections builds upon the Bayesian hierarchical model that was used by the UNPD to assess progress towards MDG 5 (Alkema et al., 2013; UNPD, 2015). This model, which we refer to as the global family planning estimation model, combines systematic trends in total contraceptive prevalence and the ratio of modern to total prevalence, modeled by logistic growth curves, with a time series model for fluctuations layered around these trends.

This model was originally launched under the support of the Track20 Project as a tool popularly known as FPET to monitor progress towards the achievement of the goals of the global FP2020 initiative (FP2020, 2014). This tool was motivated by the need for a monitoring tool which is not only less intensive computationally and time consuming than the global family planning estimation model (which requires at least 10 hours of computation time on an average personal computer with 4 core processors) but is also simple enough to use for a local stakeholder without external support and any statistical programming skills. FPET allows the user to generate national or subnational estimates and projections of family planning indicators with either the default World Contraceptive. Use any of the default databases available in the FPET like UNPD 2021 or UNPD 2020 or UNPD 2019 (archive) or Track20 2021 or Track20 2020 or user's own input database. This web-based application was created with the R package Shiny (RStudio, Inc., 2014) and runs using R (R Development Core Team, 2011) and JAGS (Plummer, 2003); however, all that is required for the user to run FPET is an internet connection and any modern web browser. More about the FPET model descriptions and its advancements over the period are available in the literature (Cahill et al., 2018; Alkema et al., 2013; New & Alkema, 2015).

In addition to provide national estimates, FPET can also be fitted to sub-national data to obtain sub-national estimates (e.g., MWRA for states and districts)

annually. In this paper, we extended FPET to obtain district level estimates of key family planning indicators for the state of Uttar Pradesh by broadening the hierarchical structure used and captured spatial differentials where appropriate. The main challenge involved while constructing estimates for sub-populations is paucity of data. However, in India's case, there are 10 multiple rounds of three surveys (DHS/NFHS, DLHS and AHS) spanned over 1991 to 2015 which provide input data at district and state level for the modeling purposes.

3. Results

We present here the results on three key family planning indicators for the state of Uttar Pradesh and its 75[4] districts: namely, modern contraceptive prevalence, unmet need for modern contraceptive methods (a broader definition of unmet need that includes women currently using traditional contraceptive methods as having an unmet need for modern contraceptive methods, since traditional methods tend to have higher failure rates compared to modern ones) and demand for family planning satisfied with modern contraceptive methods, including an assessment of the uncertainty bounds in their levels for the years 1991, 2015 and 2025 and the progress made during this period.

3.1. State Results

Modeled estimates, trends, and projections of three key family planning indicators along with survey-based estimates for Uttar Pradesh state are presented here (**Figure 1**). The chart shows the modeled estimates match the level and trend of the DHS data closely for the state of Uttar Pradesh. The comparison of the modeled estimates with data points from other survey sources shows differences that are due to model assumptions and findings of the global model. Firstly, for non-standard data (e.g., non-standard other age group of women, circles labeled with "A"), the model considers potential biases associated with the non-standard characteristics in producing the estimates. Secondly, when fitting the model, data are classified into DHS, Multiple Indicator Cluster Surveys (MICS), national survey data or other survey data to provide weightages while modeling. Based on the global assessment of data of these different types of surveys, it was found that the random errors associated with non-DHS data are greater than those associated with DHS data, especially for measuring unmet need (Alkema et al., 2013). As a result of this assessment, error variances for non-DHS data are estimated to be higher than the error variance for DHS data, and the modeled estimates will be more informed by the DHS data as compared to data from other sources. This explains the discrepancy between the Annual Health Survey (AHS) data (in black square) and the modeled estimates for unmet need.

[4]As per Primary Census Abstract of Census of India 2011, the state Uttar Pradesh had 71 districts but later four new districts were created namely, Amethi, Hapur, Sambhal and Shamli. MWRA numbers for newly created four districts were calculated by adding block level numbers that constituted these four new districts. Other input data for these four new districts were kept the same as that of respective parent districts obtained from surveys.

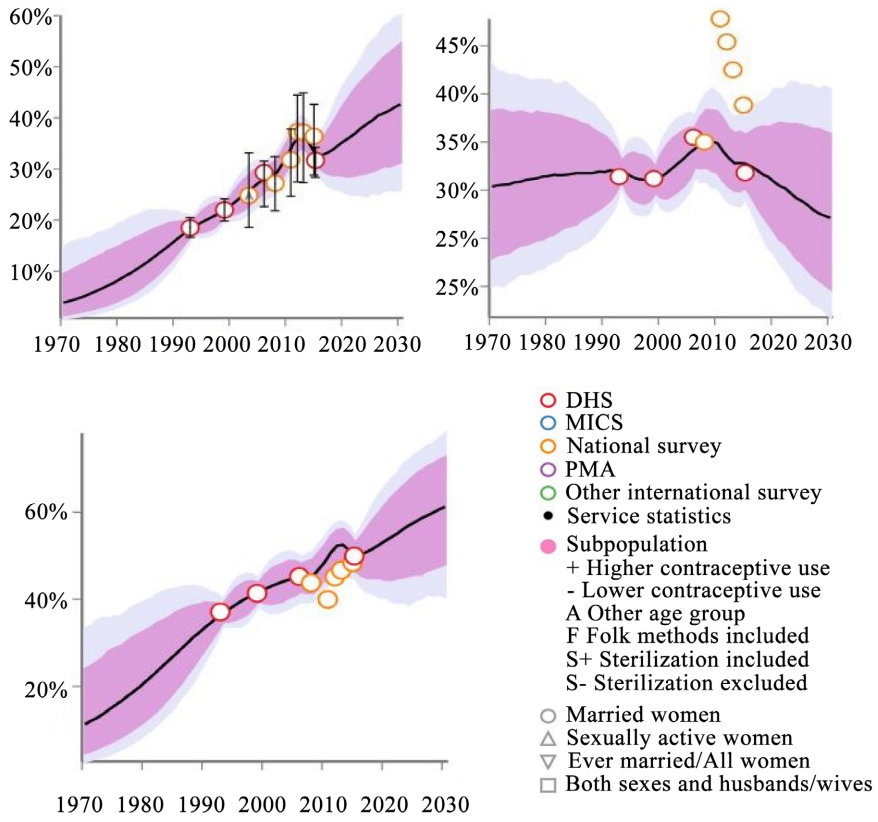

Figure 1. Modeled estimates and trends of modern contraceptive prevalence rate, unmet need for modern contraceptive methods and demand satisfied with modern contraceptive methods for Uttar Pradesh.

3.2. District Level mCPR

The estimates of mCPR, met demand for modern methods of contraceptives and unmet need for modern family planning methods with respective 95 percent uncertainty bounds for the years 1991 and 2015 for the state Uttar Pradesh and its 75 districts derived from FPET model have been presented in **Table B1** (Annexure B). Modern contraceptive prevalence rate for the state has nearly doubled from 17.2 percent (95% UI: 13.4% - 21.4%) in 1991 to 32.0 percent (95% UI: 29.8% - 34.1%) in 2015, indicating an increase of 14.8 percentage points in nearly two and half decades. The district level mCPR ranges from a low of 4.8 percent (95% UI: 4.2% - 5.4%) in Balrampur district to a high of 59.1 percent (95% UI: 55.7% - 62.3%) in Lalitpur district in the year 2015. In 2015, mCPR of four districts namely, Lalitpur (59.1%), Jhansi (56.9%), Gautam Buddha Nagar (51.3%) and Hapur (51.2%) is found to be more than 50 percent, which is nearly one-half times more than the state average. Out of 75 districts in state, 10 have high prevalence where mCPR is greater than 45 percent in 2015 (**Figure 2**); performance of 19 districts was found to be modest with mCPR ranges between 40 and 50 percent and mCPR of the remaining 42 districts spans over 20 to 40 percent in the year 2015. However, 10 districts performed very poorly with mCPR less than 20 percent in 2015 (**Figure 3**). During 1991-2015 period, the maximum gain in

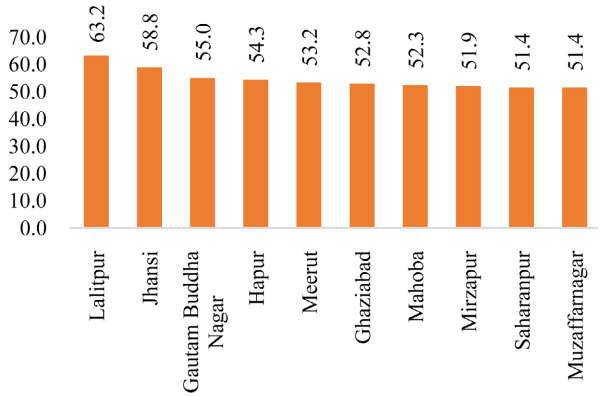

Figure 2. 10 districts where mCPR is >45% in 2015.

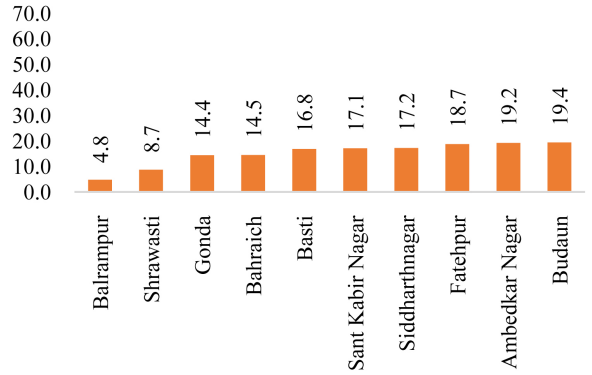

Figure 3. 10 districts where mCPR is <20% in 2015.

mCPR of 38 percent has been observed in Lalitpur district whereas mCPR declined in Balrampur and Shrawasti districts from the base year.

3.3. District Level Unmet Need for Family Planning

Regarding the second key family planning indicator, unmet need for modern family planning methods, the situation in the state has not improved as the model estimate shows 32.7 percent (95% UI: 29.3% - 37.2%) of MWRA have an unmet need for modern family planning methods in 2015, a marginal increase of nearly 1 percent from the 1991 estimate (31.9%). More than 40 percent of unmet need for modern contraceptives recorded in 11 districts, the unmet need ranges between 30 and 40 percent in 38 districts, the other 18 districts are in 25 - 30 percent range and 10 districts have shown less than 26 percent unmet need in the state in 2015 (**Figure 4**). Overall, the lowest unmet need for modern contraceptives was recorded in Jhansi district (18.6%, 95% UI: 15.4% - 22.9%) and the highest 44.9 percent (95% UI: 38.8% - 51.6%) in Kanshiram Nagar district in 2015. A significant decrease with 10 or more percentage point in unmet need has been observed in 9 districts, along with 61 districts who have also shown improvement during 1991 to 2015 period in the state. However, the situation has deteriorated in 5 districts during the above-mentioned period. There are ten districts which have unmet need greater than 40 percent in 2015 (**Figure 5**).

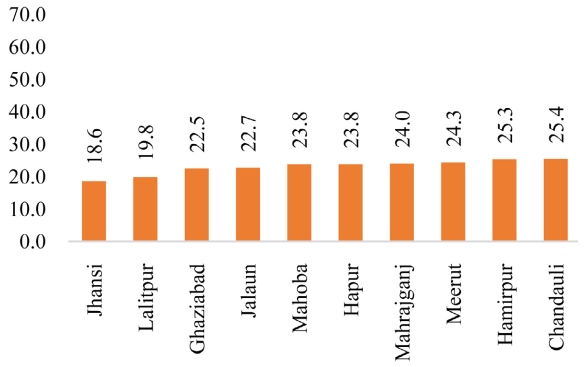

Figure 4. 10 districts where unmet need is <26% in 2015.

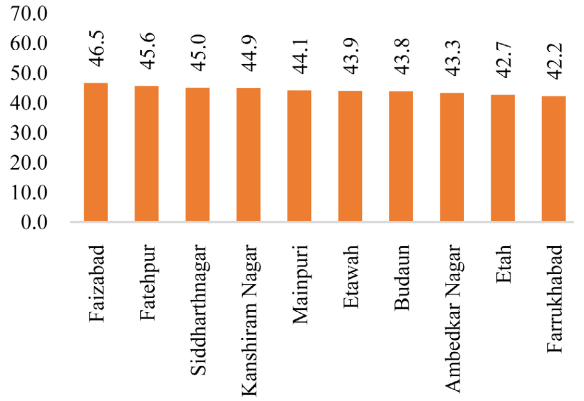

Figure 5. 10 districts where unmet need is >40% in 2015.

3.4. District Level Met Need for Demand for Modern Family Planning Methods

Uttar Pradesh has made considerable progress in the third key family planning indicator—the demand satisfied with modern family planning methods—as the estimate improved from 35.2 percent (95% UI: 28.4% - 41.6%) in 1991 to 49.5 percent (95% UI: 44.6% - 53.5%) in 2015. Performance in two districts, namely Jhansi and Lalitpur, is found to be far better with 75 percent demand satisfied with a modern contraceptive method in the state in the year 2015. The district Balrampur placed at the lowest in the list of 75 districts where only 12.7 percent (95% UI: 11.2% - 14.4%) of MWRA's demand for modern methods satisfied in 2015. While considering the distribution of districts at different levels, more than 60 percent of women's demand for modern FP methods was met in 14 districts, proportion of women in 40 districts have demand satisfied in the range of 40 - 60 percent, and 21 districts in the lowest category of less than 40 percent demand for modern FP methods met. Levels of this indicator have improved in all the districts in the state from 1991 to 2015 except for Shrawasti district where the percent of demand satisfied decreased in 2015 (18.7%) from the 1991 level (20.2%). There are 10 districts where demand satisfied with modern methods is greater than 60 percent i.e., highest and 10 districts where demand satisfied is less than 40 percent i.e., lowest (Figure 6 and Figure 7).

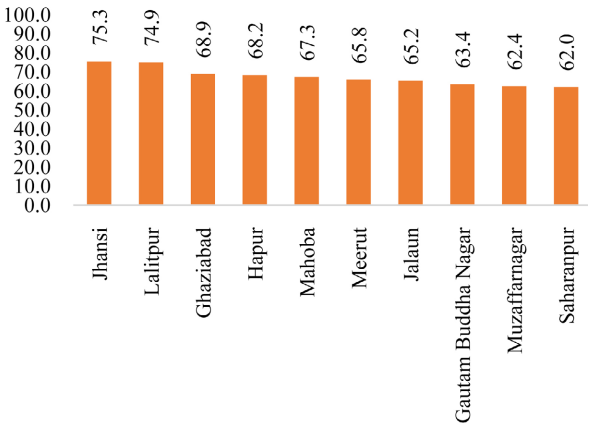

Figure 6. 10 districts where demand satisfied with modern method is >60% in 2015.

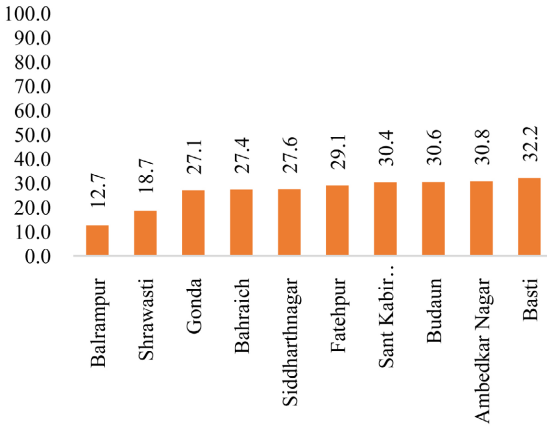

Figure 7. 10 districts where demand satisfied with modern method is <40% in 2015.

3.5. Summaries of District Level Estimates of Three Family Planning Indicators

To visualize the district-wise coverage of these three indicators, the district's estimates have been plotted on state map as per FPET modelled. **Figures 8(a)-(f)** provide the details of mCPR, unmet need and demand satisfied with modern contraceptives, respectively for 2015 and 2025. Such plots will help the program implementers to identify the districts where programs are to be focused – likely that poor performing districts located in certain adjoining region. To distinguish the levels in indicators, five gradient colors are used in the map from dark brown that signifies districts with more than 50 percent mCPR (better performance) in 2015 & 2025 (**Figure 8(a)** and **Figure 8(b)**) gradually to lighter yellow color that signifies districts with less than 20 percent mCPR. Out of ten poor performing districts in 2015, two districts have shown no progress with less than 20 percent mCPR in 2015 and 2025 and need more attention in terms for programmatic view. They are situated in northern part of the state bordering Nepal and found to be geographically contiguous.

Similarly, **Figure 8(c)** & **Figure 8(d)** provide the details of unmet need for modern methods in 2015 and 2025. In this map, lighter gradient colors denote

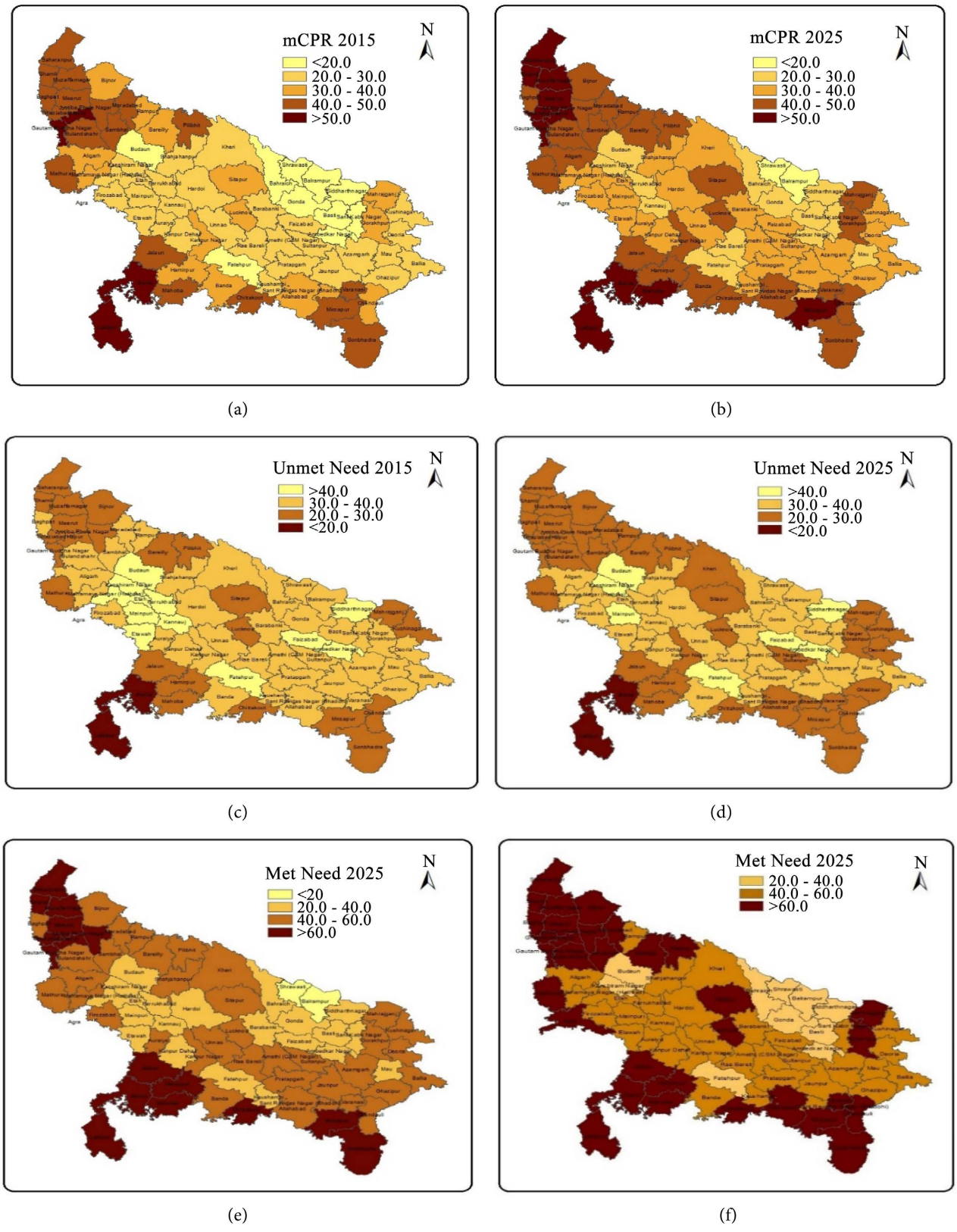

Figure 8. (a): Modelled estimates of mCPR in 2015; (b): Modelled estimates of mCPR in 2025; (c): Modelled estimates of unmet need in 2015; (d): Modelled estimates of unmet need in 2025; (e): Modelled estimates of met need in 2025; (f): Modelled estimates of met need in 2025.

poor performing districts to darker color for better performing districts unlike the color gradient in the previous maps (**Figure 8(a)** and **Figure 8(b)**). Women of married or in union in nearly three-fourth (35 out of 75) of the districts in the state have more than 30 percent unmet need for modern methods of contraception in 2015 and 2025 and most of these districts are in central and eastern part of the state.

Percent of demand satisfied by modern methods is plotted in **Figure 8(e)** and **Figure 8(f)** for the year 2015 and 2025. Color gradient applied in this map is like **Figure 8(a)** and **Figure 8(b)**—lighter color suggests poor performance and darker shades denote better performance. Accordingly, 16 of 75 districts have 60 percent or more met demand for modern family planning methods in the state in 2015 and 2025 which are ranged from 60 percent to 78.3 percent. It is worth noting that two districts namely Jhansi and Lalitpur maintain the consistency with 75 percent or more met demand for a modern family planning method in 2015 and 2025. Ten district's MWRAs are found common with less than 40 percent demand satisfied for modern methods in both reference years i.e., 2015 and 2025.

4. Futuristic Scenarios

Until now, we looked at the past performances in terms of three key family planning indicators for the state and districts during 1991-2015 period. When considering the list of districts to prioritize in terms of service provision, we need to further examine how futuristic scenarios for the districts and state would look like in 2020 and 2025. Using FPET modeling, we can estimate mCPR, demand satisfied by modern methods and unmet need for modern contraceptives with respective 95 percent uncertainty bounds for districts and state beyond 2015.

The projected estimates of three key parameters for 75 districts and state for the year 2025. Coverage of modern family planning methods is expected to reach 39.6 percent (95% UI: 24.6% - 55.3%) of MWRAs in the state in 2025, resulting in a growth of 7.6 percentage points in 10 years. Prevalence rate is expected to cross 60 percent mark only in Lalitpur district-63.2 percent (95% UI: 47.5% - 76.5%). Districts Balrampur and Shrawasti with respective mCPR of 9.9 percent and 16.9 percent in 2025 ranked lowest among 75 districts. There are 10 districts where the projected estimates of mCPR will be greater than 50 percent (**Figure 9**) and 10 districts which have lowest mCPR less than 30 percent in 2025 (**Figure 10**).

In 2017, India updated its commitment to FP2020 by ensuring 74 percent of the demand for modern contraceptives satisfied by 2020 (FP2020 Commitment, GoI, 2017). Timeframe to achieve this goal for Uttar Pradesh and its districts has been revised in view of state's below average performance and current level of contraceptive behavior. In this paper, we shall consider the target of 74 percent of the demand for family planning satisfied with modern contraceptive methods

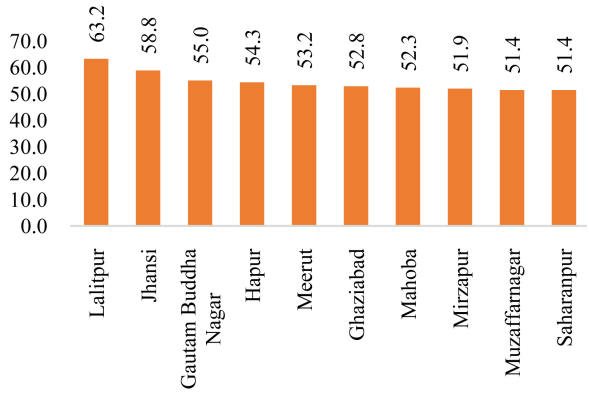

Figure 9. 10 districts where mCPR is >50% in 2025.

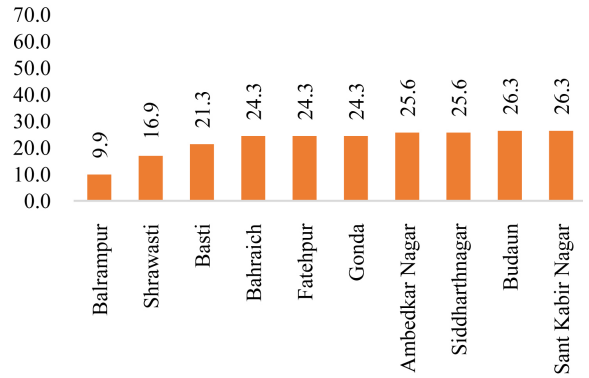

Figure 10. 10 districts where mCPR is <30% in 2025.

by 2025 for the state and districts by extending five years to India's time frame of 2020. The state is likely to achieve 57.5 percent demand satisfied by 2025 with two districts expected to cross 74 percent met demand target. Lalitpur tops the list with 78.3 percent followed by Jhansi with 75.3 percent demand satisfied with modern contraceptives by 2025. In contrast, Balrampur (22.7 percent) and Shrawasti (30.8 percent) are at the bottom list with nearby 30 percent of demand met with modern methods in the state. The projected results suggest that about half of the districts (32 districts) are likely to perform well and expected to achieve more than 60 percent of demand for modern methods met in 2025. There are10 districts which have demand satisfied with modern methods greater than 65 percent and 10 districts which have demand satisfied by modern methods in 2025 less than 40 percent (**Figure 11** and **Figure 12**).

The unmet need scenario in 2025 for the state is not very encouraging. Only two districts (Lalitpur, 17.3 percent and Jhansi, 17.8 percent) in the state are likely to bring down unmet need for modern family planning methods below 26 percent in 2025 (**Figure 13**) and there are 10 districts where unmet need is >35% in 2025 (**Figure 14**). This suggests that the state is likely to face uphill task in managing unmet need scenario.

We further estimated the number of married women in reproductive age who will be using modern contraceptive methods whose demands for modern methods

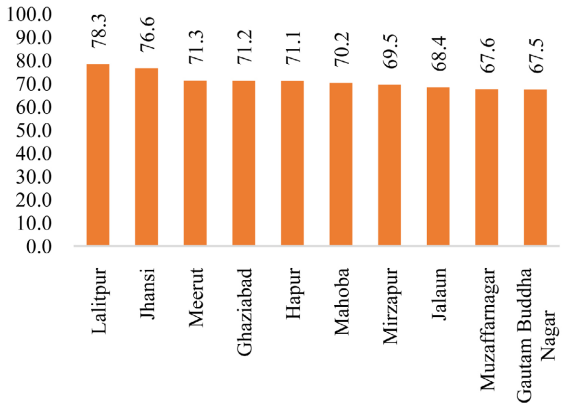

Figure 11. 10 districts where demand satisfied with modern method is >65% in 2025.

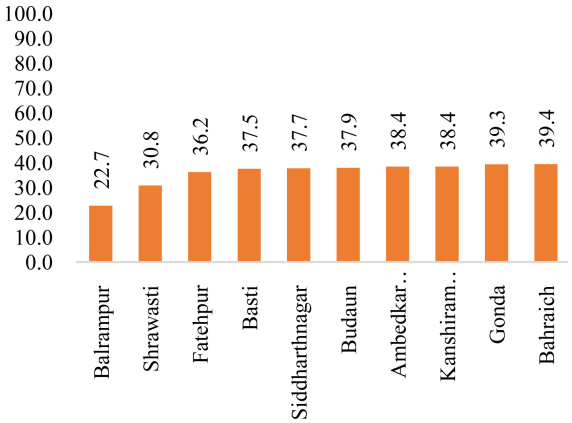

Figure 12. 10 districts where demand satisfied with modern method is <40%in 2025.

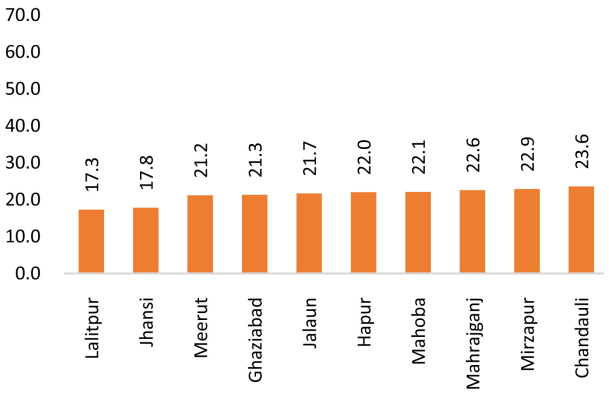

Figure 13. 10 districts where unmet need is <26% in 2025.

met in 2020 and 2025 using the FPET model (**Table B2(b)** in Annexure B). These numbers help the family planning programme implementors to quantify their task to ensure enough supply of family planning products and services in the state and districts.

In terms of the absolute count of MWRA rather than the percentage, Uttar Pradesh presents the biggest challenge with an increase of more than 4.5 million MWRA on modern contraceptive methods required by 2025 to even reach

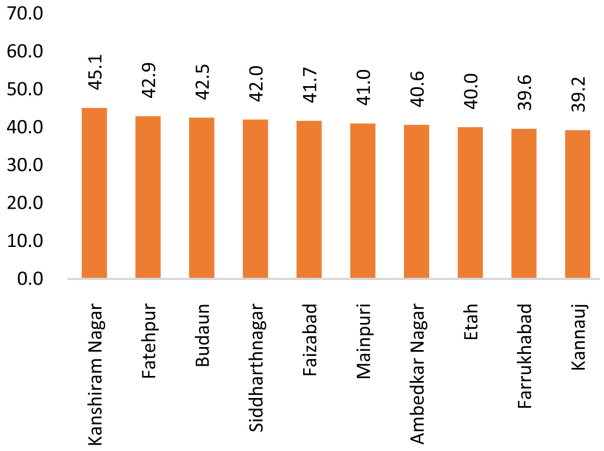

Figure 14. 10 districts where unmet need is >35% in 2025.

demand satisfied with modern method of 57.5 percent from 2015 (**Table B2(a)**, Annexure B). Only two districts will reach demand satisfied with modern method of 74 percent (shaded green) by 2025 but to reach that level, they will need an increase of more than 58 thousand MWRA by 2025. A marginal increase can be observed in demand satisfied with modern methods from 53.2 percent in 2020 to 57.5 percent in 2025 with 2.56 million MWRA in the state. Some districts will attain demand satisfied with modern method more than 70% in 2025 as increase in mCPR from 2015 to 2025 (**Figure 15**).

Out of 75 districts, only 6 districts will attain more than 70 percent demand satisfied with modern method in 2025. Two districts namely Lalitpur and Jhansi found to be attaining more than 75 percent demand satisfied with a modern contraceptive method in the state in 2025 where percentage change in mCPR is 4.1 percent and 1.9 percent, respectively from 2015 to 2025.

5. Discussion

In this paper, we have presented estimates and projections of rates and trends in modern contraceptive prevalence, unmet need for and demand satisfied with modern methods in Uttar Pradesh and all 75 districts of the state in India with associated uncertainty intervals. The estimates illustrate differences across districts both in terms of current levels and past progress from 1990 to 2015 that are masked by looking solely at state averages. Subnational projections also highlighted great differences across districts and the comparison with the target of having 75% of demand for family planning satisfied with modern contraceptive methods by 2030 indicated which districts should be prioritized based on the difference between the projected and required percentage and number of MWRA using modern contraceptive methods. Area specific policy recommendations are necessary to address these different situations.

Modelling results on three key family planning parameters suggest that the overall progress made by the state is quite modest in the last two and half decade.

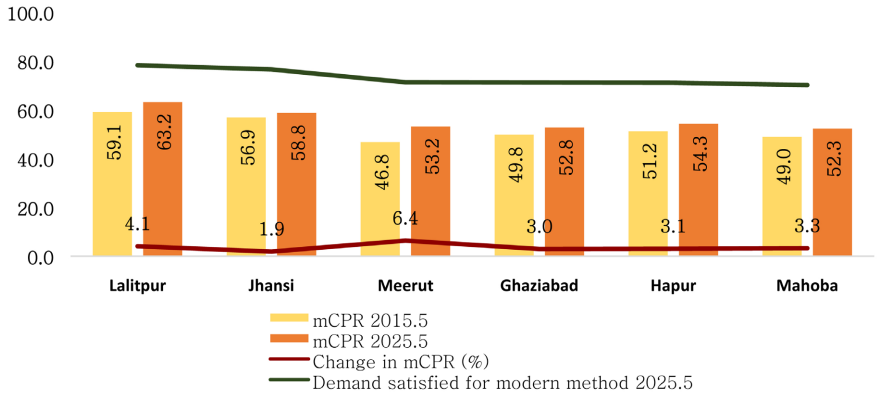

Figure 15. Districts which will attain >70% demand satisfied with modern method in 2025 as increase in mCPR from 2015 to 2025.

5.1. Prevalence of Modern Contraceptives

District wise performances suggest wide gap in levels and trends in the FP indicators with two districts viz. Jhansi and Lalitpur performed exceedingly well. Three districts like Balrampur, Basti and Shrawasti performed very poorly where the prevalence of modern contraceptive users is less than 20 precent and unmet need for family planning is comparatively high among 75 districts of Uttar Pradesh. The poor performing districts with lowest mCPR and highest unmet need for family planning in 2020 were Balrampur, Basti and Shrawasti (**Figure 16**).

Poor performing districts are found to be geographically clustered around the international border with Nepal making easy target for better planning and thereby specially focusing this area to improve the programme coverage. Additionally, district level analysis enables the state policy makers and programme implementers to draw district specific strategies by categorizing districts as per their performances and number of users to be provided with the basket of family planning choices to achieve the expected prevalence rates. Without such analysis it is a humongous task to identify the pressure points among 75 districts and make tailor-made district specific strategies.

5.2. Demand Satisfied

Family planning is key for reducing unintended pregnancies and their health consequences. It is important to analyze the coverage of demand satisfied with a modern contraception which measures state's success in providing family planning services to those who are in need. Results from the projected modelling exercise suggest that the state is not likely to achieve the set goal of meeting 74 percent of demand for modern methods even by 2025 five years after the national target. Only two districts in the state are likely to succeed in achieving this goal by 2025 implying a lot of efforts to be done by the state health functionaries.

5.3. Unmet Need

The third key parameter analyzed—unmet need for family planning, brings another

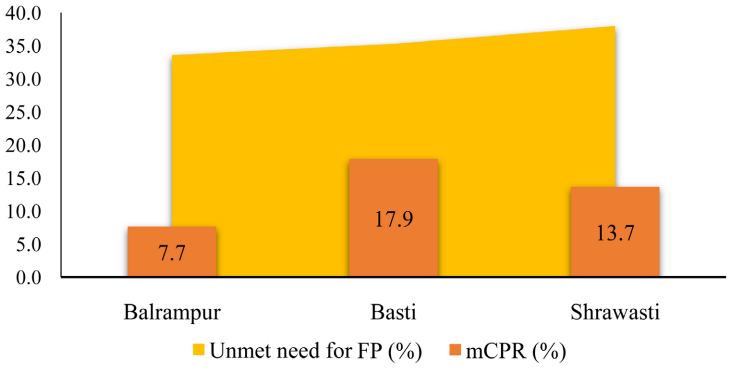

Figure 16. Districts with lowest mCPR and highest unmet need in 2020.

grim picture for the state. This indicator measures the gap between women's reproductive intentions and their contraceptive behavior which is one of the FP2020 core indicators and included in the list of SDGs (Indicator 3.7.1) as noted in **Figure 13** and **Figure 14**.

Expanding access to contraception and ensuring that demand for family planning is satisfied using effective contraceptive methods are essential for achieving universal reproductive health care services listed in the 2030 agenda for Sustainable Development. Thus, ensuring family planning services with the provision of basket of choices without leaving any geographical community or population group is essential to fulfil the aspirations of emerging country.

In this paper we have been able to show that the FPET Global model successfully extended by fitting subnational and sub-provincial (here district) data and able to draw projected estimates of three key family planning parameters at district level when input data are available. This modeling exercise was conducted under the normal user level conditions without any coding or software programming skills. Typically, such exercises would immensely help policy makers and implementors at state and district level especially for a large state like Uttar Pradesh, where stark diversity in performance of health indicators exists to track and monitor the progress of family planning program indicators. The state's contribution to achieve India's FP2020 commitment is highly significant and thus justifies the selection of the state for this exercise.

6. Recommendations/Actions for Programme Planners

- Identification of low performing districts in terms of progress of family planning indicators is the first crucial step towards preparation of evidence-based programme strategy for the large state like Uttar Pradesh.
- The study has identified 10 districts where mCPR is <30% (**Figure 10**), another 10 districts where demand satisfied with modern methods is <40% (**Figure 12**) and 10 districts who have unmet need > 35% in 2025 (**Figure 14**) need to be given priority in the family planning program.
- Monitoring and follow-up mechanism should be strengthened to increase the accessibility and availability of modern contraceptive methods at the health

facilities and community as well.

- Ensure uninterrupted availability of family planning products and services in these districts as many remote health facilities are found to have supply and logistic issues.
- Supportive supervision visits may allow programme personnel to address the challenges of providing family planning services at the health facilities. They can provide handhold support to the new providers and health facilities on spot.
- Involvement of community leaders to advocate the use of modern family planning methods in their community.
- More emphasis should be laid in promotion of new methods introduced such as injectable (*Antara*, a national programme to promote the use of injectables in the public sector by the Ministry of Health and Family Welfare) and Postpartum IUCD to increase prevalence of modern contraceptive methods.

7. Conclusion

FPET is essentially a formidable tool to apply and estimate key family planning parameters at sub-provincial level (small area estimation). Programme implementors and policy makers require smallest possible administrative level information to draw and adapt specific strategies which effectively improve the performance of family planning programs. The state of Uttar Pradesh constitutes districts which are heterogeneous with varying levels of mCPR levels and degrees of performances. In this paper, we have identified a list of districts with very low mCPR (<30%), demand satisfied with modern methods (<40%) and high unmet need (>35%) in 2025 which need to be given special attention. Similarly, many districts those are geographically adjoining and bordering Nepal in the northern part of the state, require special attention. Efforts to increase the coverage of FP services by strengthening supply delivery and demand for family planning services in these districts are crucial in achieving state and there by national family planning goals set for both FP2020 and SDGs.

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Contributors

NKR created input data sets. YPG and NKR carried out the data analysis. YPG prepared the first draft of the manuscript. All authors reviewed results and provided inputs and comments on the paper.

Conflicts of Interest

We declare that we have no conflicts of interest.

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Annexure A

1) Data for the subnational analysis of Uttar Pradesh

An overview of the data series and observations available at the subnational (state/UT-level) in India used in the estimation process is given in Table A1. Links to the data sources are provided in Table A2.

Table A1. Overview of data series and observations for Uttar Pradesh and 75 districts.

Data series	Source Category used in global FPEM and local FPEM -FPET	Number of districts in UTTAR PRADESH with an observation for each data series
Data series used for state level estimates		
Annual Health Survey 2010-11	Other survey	1
Annual Health Survey 2011-12	Other survey	1
Annual Health Survey 2012-13	Other survey	1
District Level Household and Facility Survey 1998-99	National Survey	1
District Level Household and Facility Survey 2002-04	National Survey	1
District Level Household and Facility Survey 2007-08	National Survey	1
National Family Health Survey 1992-93	DHS (NFHS)	1
National Family Health Survey 1998-99	DHS (NFHS)	1
National Family Health Survey 2004-05	DHS (NFHS)	1
National Family Health Survey 2015-16	DHS (NFHS)	1
Total number of observations		**10**
Data series used for district level estimates		
Annual Health Survey 2010-11	Other survey	71
Annual Health Survey 2011-12	Other survey	71
Annual Health Survey 2012-13	Other survey	71
District Level Household and Facility Survey 1998-99	National Survey	47
District Level Household and Facility Survey 2002-04	National Survey	71
District Level Household and Facility Survey 2007-08	National Survey	71
National Family Health Survey 2015-16	DHS (NFHS)	71
Total number of observations		473

Table A2. Links to data series for UP and its districts.

Data Series	Link
Annual Health Survey 2010-2011	http://ghdx.healthdata.org/record/india-annual-health-survey-2010-2011
Annual Health Survey 2011-2012	http://ghdx.healthdata.org/record/india-annual-health-survey-2011-2012
Annual Health Survey 2012-2013	http://ghdx.healthdata.org/record/india-annual-health-survey-2012-2013
District Level Household and Facility Survey 1998-1999	http://rchiips.org/pdf/rch1/National_Report_RCH-1.pdf
District Level Household and Facility Survey 2002-2004	http://rchiips.org/pdf/rch2/National_Report_RCH-II.pdf
District Level Household and Facility Survey 2007-2008	http://rchiips.org/pdf/INDIA_REPORT_DLHS-3.pdf

Continued

National Family Health Survey 1992-1993	http://www.dhsprogram.com/pubs/pdf/FRIND1/FRIND1.pdf
National Family Health Survey 1998-1999	http://www.dhsprogram.com/pubs/pdf/FRIND2/FRIND2.pdf
National Family Health Survey 2005-2006	http://dhsprogram.com/pubs/pdf/FRIND3/FRIND3-Vol1andVol2.pdf
National Family Health Survey 2015-2016	http://rchiips.org/nfhs/nfhs4.shtml

2) The Family Planning Estimation Tool (FPET)

FPET is a web-based application available at http://fpet.track20.org that allows users to generate view and compare national and subnational estimates and projections of family planning indicators.

With FPET user can:

- View the data used and results of an existing run
- Start a new run using the default database or his own data and view the results of the new run
- Compare the results of two different runs.
- Get information about how realistic/ambitious a specific goal would be given the current model projections for target-setting purposes. For example, the user would provide a target level of modern contraceptive prevalence for the year 2030 and the app would then give the estimated probability that that target would be reached in that year given the current model projections. Vice versa a target could be based on the modern contraceptive prevalence level in 2020 for which the current projected probability of obtaining is only 10%.
- Result tables can be downloaded as CSV files and result figures as PDF files.

Annexure B

Table B1. Estimates and 95 percent uncertainty intervals (percent) of modern contraceptive prevalence, demand and unmet need for modern contraceptive methods in 1991 and 2015 and their percentage points change between 1991 and 2015 for Uttar Pradesh and its districts.

State/Districts	Modern contraceptive prevalence (percent [95 percent uncertainty interval])			Demand satisfied with modern methods (percent [95 percent uncertainty interval])			Unmet need for modern methods (percent [95 percent uncertainty interval])		
	1991	2015	Change 1991-2015	1991	2015	Change 1991-2015	1991	2015	Change 1991-2015
Uttar Pradesh	**17.2 (13.4 - 21.4)**	**32.0 (29.8 - 34.1)**	**14.8 {(16.4) - (12.7)}**	**35.2 (28.4 - 41.6)**	**49.5 (44.6 - 53.5)**	**14.3 {(16.2) - (11.9)}**	**31.9 (27.3 - 36.4)**	**32.7 (29.3 - 37.2)**	**0.8 {(2.0) - (0.8)}**
Agra	19.8 (9.3 - 36.7)	42.4 (38.0 - 46.3)	22.6 {(28.7) - (9.6)}	36.8 (19.8 - 57.8)	59.1 (51.4 - 65.6)	22.3 {(31.6) - (7.8)}	33.7 (23.3 - 45.0)	29.4 (23.9 - 36.3)	−4.3 {(0.6) - (−8.7)}
Aligarh	13.8 (7.0 - 22.3)	38.3 (33.9 - 42.2)	24.5 {(26.9) - (19.9)}	25.2 (14.6 - 39.3)	53.4 (46.0 - 59.6)	28.2 {(31.4) - (20.3)}	40.5 (30.6 - 52.0)	33.4 (28.1 - 40.4)	−7.1 {(−2.5) - (−11.6)}
Allahabad	16.8 (9.6 - 30.4)	35.3 (32.5 - 38.2)	18.5 {(22.9) - (7.8)}	30.6 (18.0 - 48.7)	53.5 (49.0 - 57.5)	22.9 {(31.0) - (8.8)}	38.4 (27.7 - 50.4)	30.8 (27.6 - 34.4)	−7.6 {(−0.1) - (−16.0)}
Ambedkar Nagar	10.1 (4.9 - 19.3)	19.2 (16.6 - 21.7)	9.1 {(11.7) - (2.4)}	19.1 (9.6 - 32.5)	30.8 (25.2 - 36.0)	11.7 {(15.6) - (3.5)}	42.9 (32.6 - 55.5)	43.3 (37.9 - 50.1)	0.4 {(5.3) - (−5.4)}

Continued

Amethi (CSM Nagar)	16.7 (5.5 - 40.5)	23.5 (21.1 - 26.0)	6.8 {(15.6) - (−14.5)}	30.7 (12.4 - 58.7)	42.3 (37.8 - 46.4)	11.6 {(25.4) - (−12.3)}	37.1 (24.5 - 51.4)	32.1 (28.9 - 36.1)	−5.0 {(4.4) - (−15.3)}
Auraiya	17.4 (7.5 - 38.8)	29.6 (26.1 - 32.9)	12.2 {(18.6) - (−5.9)}	28.2 (14.3 - 52.5)	44.3 (37.4 - 50.4)	16.1 {(23.1) - (−2.1)}	43.5 (31.6 - 57.8)	37.2 (31.7 - 44.2)	−6.3 {(0.1) - (−13.6)}
Azamgarh	9.4 (4.7 - 16.2)	26.9 (24.1 - 29.7)	17.5 {(19.4) - (13.5)}	18.8 (10.0 - 29.7)	41.1 (36.2 - 45.4)	22.3 {(26.2) - (15.7)}	40.2 (30.0 - 52.2)	38.6 (34.8 - 43.4)	−1.6 {(4.8) - (−8.8)}
Baghpat	27.8 (13.6 - 45.8)	43.8 (38.3 - 48.6)	16.0 {(24.7) - (2.8)}	44.6 (23.9 - 63.6)	57.8 (48.8 - 65.7)	13.2 {(24.9) - (2.1)}	34.7 (23.5 - 49.2)	32.0 (25.0 - 40.3)	−2.7 {(1.5) - (−8.9)}
Bahraich	6.9 (3.7 - 13.0)	14.5 (13.1 - 15.9)	7.6 {(9.4) - (2.9)}	13.8 (7.9 - 23.5)	27.4 (24.5 - 30.3)	13.6 {(16.6) - (6.8)}	43.5 (32.4 - 54.8)	38.2 (35.3 - 41.6)	−5.3 {(2.9) - (−13.2)}
Ballia	16.0 (8.2 - 27.0)	25.9 (23.1 - 28.7)	9.9 {(14.9) - (1.7)}	29.6 (17.5 - 44.3)	42.9 (37.5 - 47.7)	13.3 {(20.0) - (3.4)}	37.7 (27.6 - 48.8)	34.5 (30.7 - 39.5)	−3.2 {(3.1) - (−9.3)}
Balrampur	7.9 (3.3 - 16.9)	4.8 (4.2 - 5.4)	-3.1 {(0.9) - (−11.5)}	16.2 (7.8 - 30.8)	12.7 (11.2 - 14.4)	-3.5 {(3.4) - (−16.4)}	40.1 (28.9 - 51.9)	33.0 (30.6 - 35.5)	−7.1 {(1.7) - (−16.4)}
Banda	15.4 (8.8 - 26.5)	35.6 (31.7 - 39.3)	20.2 {(22.9) - (12.8)}	28.0 (17.1 - 43.2)	51.3 (44.3 - 57.7)	23.3 {(27.2) - (14.5)}	39.8 (28.7 - 51.2)	33.9 (28.4 - 40.4)	−5.9 {(−0.3) - (−10.8)}
Barabanki	10.6 (5.7 - 19.4)	23.8 (21.1 - 26.6)	13.2 {(15.4) - (7.2)}	21.4 (11.8 - 34.2)	38.7 (32.9 - 44.0)	17.3 {(21.1) - (9.8)}	39.6 (29.8 - 51.0)	37.9 (33.1 - 43.7)	−1.7 {(3.3) - (−7.3)}
Bareilly	15.1 (8.5 - 23.6)	38.9 (35.6 - 42.0)	23.8 {(27.1) - (18.4)}	28.9 (17.7 - 44.3)	58.2 (52.0 - 63.8)	29.3 {(34.3) - (19.5)}	36.5 (26.5 - 47.9)	28.0 (23.6 - 33.4)	−8.5 {(−2.9) - (−14.5)}
Basti	9.0 (4.5 - 16.6)	16.8 (15.0 - 18.8)	7.8 {(10.5) - (2.2)}	18.2 (9.4 - 30.6)	32.2 (28.6 - 35.6)	14.0 {(19.2) - (5.0)}	41.3 (30.6 - 52.6)	35.5 (32.5 - 39.0)	−5.8 {(1.9) - (−13.6)}
Bijnor	20.1 (10.7 - 32.1)	39.8 (36.3 - 43.3)	19.7 {(25.6) - (11.2)}	35.8 (21.1 - 51.0)	59.7 (53.3 - 64.7)	23.9 {(32.2) - (13.7)}	36.1 (24.8 - 47.4)	26.9 (23.0 - 32.3)	−9.2 {(−1.8) - (−15.1)}
Budaun	11.2 (3.9 - 23.8)	19.4 (16.7 - 22.1)	8.2 {(12.8) - (−1.7)}	21.0 (7.8 - 38.8)	30.6 (24.9 - 36.4)	9.6 {(17.1) - (−2.4)}	42.0 (30.5 - 54.4)	43.8 (37.7 - 50.9)	1.8 {(7.2) - (−3.5)}
Bulandshahr	17.9 (10.5 - 30.0)	41.4 (36.9 - 45.3)	23.5 {(26.4) - (15.3)}	31.1 (19.2 - 47.1)	56.2 (48.6 - 62.2)	25.1 {(29.4) - (15.1)}	39.4 (29.8 - 50.8)	32.3 (27.2 - 39.2)	−7.1 {(−2.6) - (−11.6)}
Chandauli	24.2 (12.4 - 45.6)	37.9 (34.7 - 41.1)	13.7 {(22.3) - (−4.5)}	42.8 (23.9 - 64.5)	59.8 (56.0 - 63.4)	17.0 {(32.1) - (−1.1)}	32.2 (21.7 - 48.3)	25.4 (23.2 - 28.1)	−6.8 {(1.5) - (−20.2)}
Chitrakoot	21.6 (9.3 - 42.6)	40.3 (36.9 - 43.6)	18.7 {(27.6) - (1.0)}	36.9 (18.7 - 59.7)	60.0 (54.8 - 64.4)	23.1 {(36.1) - (4.7)}	36.5 (25.4 - 48.6)	26.9 (23.7 - 31.0)	−9.6 {(−1.7) - (−17.6)}
Deoria	13.5 (6.9 - 24.3)	27.8 (25.3 - 30.5)	14.3 {(18.4) - (6.2)}	25.3 (14.3 - 41.9)	46.9 (42.8 - 50.9)	21.6 {(28.5) - (9.0)}	39.3 (29.2 - 53.0)	31.4 (28.5 - 35.0)	−7.9 {(−0.7) - (−18.0)}
Etah	9.2 (5.1 - 16.0)	24.5 (21.7 - 27.2)	15.3 {(16.6) - (11.2)}	17.6 (10.0 - 27.9)	36.5 (31.1 - 41.7)	18.9 {(21.1) - (13.8)}	43.8 (33.9 - 55.2)	42.7 (37.4 - 48.7)	−1.1 {(3.5) - (−6.5)}
Etawah	21.7 (8.3 - 40.5)	26.3 (22.9 - 29.7)	4.6 {(14.6) - (−10.8)}	33.4 (14.9 - 56.1)	37.5 (31.3 - 43.5)	4.1 {(16.4) - (−12.6)}	42.3 (29.4 - 56.6)	43.9 (37.9 - 50.7)	1.6 {(8.5) - (−5.9)}
Faizabad	12.7 (6.4 - 24.6)	25.0 (22.0 - 28.1)	12.3 {(15.6) - (3.5)}	21.1 (11.3 - 36.4)	35.0 (29.9 - 40.1)	13.9 {(18.6) – (3.7)}	47.2 (36.9 - 60.1)	46.5 (41.4 - 52.4)	−0.7 {(4.5) - (−7.7)}
Farrukhabad	11.8 (5.1 - 24.5)	23.9 (21.0 - 26.8)	12.1 {(15.9) - (2.3)}	21.2 (10.0 - 40.6)	36.1 (30.5 - 41.3)	14.9 {(20.5) - (0.7)}	43.7 (30.6 - 56.7)	42.2 (37.2 - 48.5)	−1.5 {(6.6) - (−8.2)}
Fatehpur	12.0 (5.8 - 22.9)	18.7 (15.8 - 21.6)	6.7 {(10.0) - (−1.3)}	21.5 (10.8 - 36.6)	29.1 (22.9 - 35.2)	7.6 {(12.1) - (−1.4)}	44.1 (32.4 - 57.8)	45.6 (38.9 - 53.8)	1.5 {(6.5) - (−4.0)}
Firozabad	16.6 (7.1 - 30.6)	29.2 (25.3 - 33.0)	12.6 {(18.2) - (2.4)}	27.3 (13.2 - 45.1)	42.3 (34.9 - 49.3)	15.0 {(21.7) - (4.2)}	43.9 (31.8 - 56.2)	39.8 (33.5 - 47.7)	−4.1 {(1.7) - (−8.5)}
Gautam Buddha Nagar	29.3 (12.8 - 48.1)	51.3 (45.4 - 56.1)	22.0 {(32.6) - (8.0)}	44.7 (23.9 - 66.8)	63.4 (54.9 - 70.4)	18.7 {(31.0) - (3.6)}	35.4 (23.4 - 48.3)	29.7 (23.6 - 37.4)	−5.7 {(0.2) - (−10.9)}

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Ghaziabad	24.4 (10.8 - 44.0)	49.8 (46.3 - 53.2)	25.4 {(35.5) - (9.2)}	40.8 (22.0 - 61.7)	68.9 (63.4 - 73.6)	28.1 {(41.4) - (11.9)}	34.6 (24.5 - 47.1)	22.5 (18.7 - 27.2)	−12.1 {(−5.8) - (−19.9)}
Ghazipur	15.0 (8.4 - 27.0)	28.5 (25.7 - 31.4)	13.5 {(17.3) - (4.4)}	27.3 (16.2 - 42.9)	47.8 (42.5 - 52.4)	20.5 {(26.3) - (9.5)}	40.1 (30.9 - 51.1)	31.1 (27.6 - 35.8)	−9.0 {(−3.3) - (−15.3)}
Gonda	7.5 (3.5 - 13.2)	14.4 (12.9 - 16.1)	6.9 {(9.4) - (2.9)}	14.9 (7.4 - 25.5)	27.1 (24.1 - 30.4)	12.2 {(16.7) - (4.9)}	42.4 (30.1 - 54.8)	38.7 (35.6 - 42.2)	−3.7 {(5.5) - (−12.6)}
Gorakhpur	18.1 (9.7 - 30.2)	38.8 (35.7 - 42.1)	20.7 {(26.0) - (11.9)}	30.0 (17.3 - 45.4)	53.6 (48.9 - 57.9)	23.6 {(31.6) - (12.5)}	42.1 (30.8 - 53.4)	33.6 (30.1 - 37.7)	−8.5 {(−0.7) - (−15.7)}
Hamirpur	22.7 (12.4 - 36.6)	39.7 (36.5 - 43.0)	17.0 {(24.1) - (6.4)}	38.0 (23.1 - 54.6)	61.1 (55.9 - 65.3)	23.1 {(32.8) - (10.7)}	36.8 (26.5 - 47.8)	25.3 (22.4 - 29.5)	−11.5 {(−4.1) - (−18.3)}
Hapur	30.9 (11.5 - 54.4)	51.2 (46.6 - 55.2)	20.3 {(35.1) - (0.8)}	48.4 (22.4 - 72.5)	68.2 (60.7 - 73.8)	19.8 {(38.3) - (1.3)}	32.4 (19.6 - 49.5)	23.8 (19.3 - 30.3)	−8.6 {(−0.3) - (−19.2)}
Hardoi	8.9 (4.5 - 15.4)	21.3 (19.2 - 23.6)	12.4 {(14.7) - (8.2)}	17.7 (10.2 - 28.5)	36.4 (31.9 - 40.6)	18.7 {(21.7) - (12.1)}	41.1 (30.6 - 51.0)	37.2 (33.6 - 41.8)	−3.9 {(3.0) - (−9.2)}
Jalaun	25.6 (15.9 - 43.1)	42.5 (39.1 - 45.6)	16.9 {(23.2) - (2.5)}	43.2 (28.4 - 61.7)	65.2 (60.2 - 69.1)	22.0 {(31.8) - (7.4)}	34.0 (24.3 - 45.2)	22.7 (20.1 - 26.6)	−11.3 {(−4.2) - (−18.6)}
Jaunpur	18.1 (9.8 - 29.6)	28.9 (26.1 - 31.9)	10.8 {(16.3) - (2.3)}	32.9 (19.6 - 49.0)	44.8 (39.8 - 49.2)	11.9 {(20.2) - (0.2)}	36.3 (26.7 - 46.9)	35.7 (32.2 - 40.4)	−0.6 {(5.5) - (−6.5)}
Jhansi	38.6 (23.6 - 55.5)	56.9 (53.2 - 60.4)	18.3 {(29.6) - (4.9)}	57.5 (39.3 - 75.4)	75.3 (70.1 - 79.5)	17.8 {(30.8) - (4.1)}	28.3 (17.7 - 38.9)	18.6 (15.4 - 22.9)	−9.7 {(−2.3) - (−16.0)}
Jyotiba Phule Nagar	17.4 (7.3 - 35.2)	44.4 (40.2 - 48.2)	27.0 {(32.9) - (13.0)}	30.8 (15.0 - 53.9)	61.9 (54.6 - 67.5)	31.1 {(39.6) - (13.6)}	38.2 (26.3 - 49.0)	27.3 (22.8 - 33.7)	−10.9 {(−3.5) - (−15.3)}
Kannauj	12.5 (4.6 - 27.8)	21.5 (19.2 - 24.0)	9.0 {(14.6) - (−3.8)}	22.0 (8.7 - 42.1)	34.4 (29.7 - 39.1)	12.4 {(21.0) - (−3.0)}	44.1 (31.1 - 57.2)	40.9 (36.5 - 46.2)	−3.2 {(5.4) - (−11.0)}
Kanpur Dehat	15.5 (8.4 - 26.3)	26.4 (23.5 - 29.2)	10.9 {(15.1) - (2.9)}	24.6 (14.0 - 39.2)	40.0 (34.2 - 45.0)	15.4 {(20.2) - (5.8)}	47.6 (35.6 - 58.8)	39.6 (35.0 - 45.8)	−8.0 {(−0.6) - (−13.0)}
Kanpur Nagar	27.8 (15.7 - 43.3)	39.8 (35.4 - 43.8)	12.0 {(19.7) - (0.5)}	41.6 (25.2 - 58.5)	55.3 (47.3 - 61.8)	13.7 {(22.1) - (3.3)}	38.8 (27.8 - 52.6)	32.2 (26.6 - 39.7)	−6.6 {(−1.2) - (−12.9)}
Kanshiram Nagar	9.8 (4.9 - 19.0)	26.7 (23.3 - 30.2)	16.9 {(18.4) - (11.2)}	18.6 (9.2 - 31.4)	37.3 (31.3 - 43.4)	18.7 {(22.1) - (12.0)}	44.1 (34.0 - 53.9)	44.9 (38.8 - 51.6)	0.8 {(4.8) - (−2.3)}
Kaushambi	10.3 (4.3 - 21.0)	26.0 (23.2 - 29.0)	15.7 {(18.9) - (8.0)}	19.4 (9.0 - 34.4)	39.8 (34.1 - 44.8)	20.4 {(25.1) - (10.4)}	42.6 (31.0 - 54.3)	39.4 (34.8 - 45.2)	−3.2 {(3.8) - (−9.1)}
Kheri	16.4 (9.1 - 26.7)	26.9 (24.4 - 29.4)	10.5 {(15.3) - (2.7)}	31.4 (18.8 - 46.0)	44.9 (40.7 - 48.7)	13.5 {(21.9) - (2.7)}	36.1 (27.2 - 47.2)	33.0 (30.2 - 36.4)	−3.1 {(3.0) - (−10.8)}
Kushinagar	22.5 (10.8 - 44.4)	29.8 (27.0 - 32.7)	7.3 {(16.2) - (−11.7)}	38.4 (20.7 - 61.2)	52.7 (48.8 - 56.6)	14.3 {(28.1) - (−4.6)}	35.6 (25.0 - 50.7)	26.7 (24.4 - 29.5)	−8.9 {(−0.6) - (−21.2)}
Lalitpur	21.1 (11.4 - 32.6)	59.1 (55.7 - 62.3)	38.0 {(44.3) - (29.7)}	38.0 (23.3 - 52.6)	74.9 (70.1 - 78.6)	36.9 {(46.8) - (26.0)}	34.3 (25.1 - 44.7)	19.8 (16.8 - 24.0)	−14.5 {(−8.3) - (−20.7)}
Lucknow	33.7 (20.1 - 48.5)	39.6 (36.2 - 43.1)	5.9 {(16.1) - (−5.4)}	50.5 (33.8 - 66.6)	58.8 (52.6 - 63.8)	8.3 {(18.8) - (−2.8)}	32.8 (23.2 - 43.9)	27.8 (23.8 - 33.2)	−5.0 {(0.6) - (−10.7)}
Mahamaya Nagar (Hathras)	13.6 (5.5 - 25.8)	34.9 (30.5 - 39.1)	21.3 {(25.0) - (13.3)}	23.4 (9.9 - 39.8)	46.9 (39.7 - 53.9)	23.5 {(29.8) - (14.1)}	44.0 (33.4 - 57.3)	39.4 (33.0 - 46.8)	−4.6 {(−0.4) - (−10.5)}
Mahoba	19.2 (9.9 - 32.5)	49.0 (44.1 - 53.1)	29.8 {(34.2) - (20.6)}	34.5 (18.9 - 51.1)	67.3 (59.0 - 73.9)	32.8 {(40.1) - (22.8)}	36.1 (26.8 - 47.8)	23.8 (18.5 - 30.9)	−12.3 {(−8.3) - (−16.9)}
Mahrajganj	18.2 (10.0 - 31.1)	33.1 (30.6 - 36.0)	14.9 {(20.6) - (4.9)}	32.1 (18.7 - 49.5)	58.0 (54.7 - 61.5)	25.9 {(36.0) - (12.0)}	38.4 (28.7 - 48.9)	24.0 (21.9 - 26.1)	−14.4 {(−6.8) - (−22.8)}
Mainpuri	9.6 (3.7 - 22.0)	24.6 (21.4 - 27.7)	15.0 {(17.7) - (5.7)}	16.8 (7.3 - 34.3)	35.8 (29.8 - 41.0)	19.0 {(22.5) - (6.7)}	46.6 (34.0 - 60.1)	44.1 (38.9 - 50.8)	−2.5 {(4.9) - (−9.3)}

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Mathura	15.5 (8.2 - 27.4)	43.6 (39.6 - 47.3)	28.1 {(31.4) - (19.9)}	27.9 (15.4 - 43.9)	59.8 (53.4 - 65.0)	31.9 {(38.0) - (21.1)}	40.5 (31.3 - 50.3)	29.3 (25.2 - 35.2)	−11.2 {(−6.1) - (−15.1)}
Mau	13.7 (7.0 - 24.5)	22.4 (19.6 - 25.2)	8.7 {(12.6) - (0.7)}	26.0 (14.6 - 40.9)	37.7 (31.5 - 43.1)	11.7 {(16.9) - (2.2)}	38.8 (28.9 - 52.1)	37.0 (32.2 - 43.8)	−1.8 {(3.3) - (−8.3)}
Meerut	24.4 (14.6 - 37.3)	46.8 (42.6 - 50.7)	22.4 {(28.0) - (13.4)}	43.7 (29.9 - 59.8)	65.8 (58.5 - 71.8)	22.1 {(28.6) - (12.0)}	31.3 (21.8 - 40.3)	24.3 (19.6 - 30.6)	−7.0 {(−2.2) - (−9.7)}
Mirzapur	20.5 (12.4 - 33.7)	43.1 (40.0 - 46.2)	22.6 {(27.6) - (12.5)}	36.7 (23.4 - 52.8)	61.5 (56.8 - 65.3)	24.8 {(33.4) - (12.5)}	35.4 (25.8 - 46.4)	27.0 (24.2 - 30.8)	−8.4 {(−1.6) - (−15.6)}
Moradabad	15.0 (6.4 - 32.7)	40.8 (36.3 - 44.9)	25.8 {(29.9) - (12.2)}	27.5 (14.0 - 48.5)	56.7 (48.6 - 63.3)	29.2 {(34.6) - (14.8)}	39.4 (28.7 - 52.5)	31.3 (25.6 - 38.4)	−8.1 {(−3.1) - (−14.1)}
Muzaffarnagar	22.8 (8.7 - 38.2)	45.7 (41.6 - 49.5)	22.9 {(32.9) - (11.3)}	38.7 (18.5 - 56.7)	62.4 (56.0 - 67.9)	23.7 {(37.5) - (11.2)}	35.7 (25.4 - 47.1)	27.5 (23.0 - 33.2)	−8.2 {(−2.4) - (−13.9)}
Pilibhit	18.1 (8.2 - 38.3)	41.5 (37.7 - 45.0)	23.4 {(29.5) - (6.7)}	35.3 (17.8 - 57.6)	58.4 (52.0 - 64.1)	23.1 {(34.2) - (6.5)}	33.4 (23.0 - 45.3)	29.6 (24.8 - 35.1)	−3.8 {(1.8) - (−10.2)}
Pratapgarh	15.9 (8.6 - 29.4)	28.0 (25.3 - 30.9)	12.1 {(16.7) - (1.5)}	28.3 (17.1 - 45.2)	46.0 (40.8 - 50.6)	17.7 {(23.7) - (5.4)}	40.2 (28.9 - 50.8)	32.9 (29.4 - 37.5)	−7.3 {(0.5) - (−13.3)}
Rae Bareli	12.6 (6.9 - 20.3)	22.6 (20.2 - 25.1)	10.0 {(13.3) - (4.8)}	24.7 (14.6 - 38.6)	42.3 (38.2 - 46.4)	17.6 {(23.6) - (7.8)}	38.5 (27.4 - 50.9)	30.7 (27.9 - 34.3)	−7.8 {(0.5) - (−16.6)}
Rampur	18.5 (6.2 - 38.9)	38.8 (35.2 - 42.2)	20.3 {(29.0) - (3.3)}	33.0 (13.9 - 55.6)	55.7 (49.0 - 61.1)	22.7 {(35.1) - (5.5)}	37.2 (26.9 - 49.3)	30.9 (26.5 - 37.0)	−6.3 {(−0.4) - (−12.3)}
Saharanpur	23.3 (13.0 - 38.1)	46.2 (41.8 - 50.2)	22.9 {(28.8) - (12.1)}	39.2 (24.9 - 57.2)	62.0 (54.8 - 67.6)	22.8 {(29.9) - (10.4)}	35.7 (25.2 - 46.2)	28.4 (23.6 - 34.8)	−7.3 {(−1.6) - (−11.4)}
Sambhal	22.9 (7.9 - 45.9)	40.7 (36.1 - 44.9)	17.8 {(28.2) - (−1.0)}	36.5 (14.2 - 60.9)	56.5 (48.4 - 63.5)	20.0 {(34.2) - (2.6)}	39.7 (26.0 - 55.2)	31.4 (25.4 - 38.9)	−8.3 {(−0.6) - (−16.3)}
Sant Kabir Nagar	11.3 (4.3 - 23.6)	17.1 (15.2 - 19.1)	5.8 {(10.9) - (−4.5)}	21.4 (9.4 - 40.1)	30.4 (26.4 - 34.3)	9.0 {(17.0) - (−5.8)}	41.4 (29.3 - 54.5)	39.2 (35.4 - 43.8)	−2.2 {(6.1) - (−10.7)}
Sant Ravidas Nagar (Bhadohi)	18.1 (9.9 - 30.4)	32.5 (29.6 - 35.5)	14.4 {(19.7) - (5.1)}	32.2 (19.1 - 49.3)	49.3 (44.5 - 53.7)	17.1 {(25.4) - (4.4)}	37.8 (27.2 - 50.0)	33.4 (29.9 - 37.7)	−4.4 {(2.7) - (−12.3)}
Shahjahanpur	12.9 (5.1 - 27.5)	29.2 (26.1 - 32.3)	16.3 {(21.0) - (4.8)}	24.9 (11.0 - 45.6)	44.9 (38.9 - 50.7)	20.0 {(27.9) - (5.1)}	38.4 (26.9 - 49.9)	35.9 (30.9 - 41.7)	−2.5 {(4.0) - (−8.2)}
Shamli	21.0 (8.5 - 46.5)	45.3 (40.9 - 49.1)	24.3 {(32.4) - (2.6)}	35.9 (17.4 - 64.8)	61.8 (54.5 - 67.5)	25.9 {(37.1) - (2.7)}	36.2 (23.9 - 51.2)	28.0 (23.4 - 34.5)	−8.2 {(−0.5) - (−16.7)}
Shrawasti	10.5 (4.1 - 22.3)	8.7 (7.7 - 9.8)	−1.8 {(3.6) - (−12.5)}	20.2 (8.9 - 38.1)	18.7 (16.3 - 21.4)	−1.5 {(7.4) - (−16.7)}	41.6 (30.3 - 53.2)	37.6 (34.4 - 41.3)	−4.0 {(4.1) - (−11.9)}
Siddharthnagar	5.4 (2.3 - 11.3)	17.2 (15.3 - 19.2)	11.8 {(13.0) - (7.9)}	10.1 (4.3 - 20.0)	27.6 (23.8 - 31.3)	17.5 {(19.5) - (11.3)}	47.8 (35.1 - 60.2)	45.0 (40.9 - 49.7)	−2.8 {(5.8) - (−10.5)}
Sitapur	15.2 (7.7 - 24.5)	30.6 (28.3 - 33.1)	15.4 {(20.6) - (8.6)}	29.9 (17.5 - 43.8)	51.4 (47.3 - 55.2)	21.5 {(29.8) - (11.4)}	35.3 (26.3 - 45.4)	28.9 (26.1 - 32.3)	−6.4 {(−0.2) - (−13.1)}
Sonbhadra	16.9 (8.9 - 29.4)	41.4 (38.3 - 44.4)	24.5 {(29.4) - (15.0)}	30.2 (18.2 - 47.2)	61.1 (56.6 - 65.0)	30.9 {(38.4) - (17.8)}	38.4 (29.3 - 49.0)	26.4 (23.5 - 30.1)	−12.0 {(−5.8) - (−18.9)}
Sultanpur	14.3 (8.1 - 23.7)	25.3 (22.8 - 28.0)	11.0 {(14.7) - (4.3)}	28.5 (17.5 - 44.2)	44.4 (40.3 - 48.5)	15.9 {(22.8) - (4.3)}	36.1 (26.2 - 47.7)	31.7 (28.7 - 35.1)	−4.4 {(2.5) - (−12.6)}
Unnao	10.9 (5.6 - 19.6)	27.5 (24.6 - 30.5)	16.6 {(19.0) - (10.9)}	20.0 (10.8 - 32.4)	43.3 (37.5 - 48.5)	23.3 {(26.7) - (16.1)}	44.0 (31.8 - 54.6)	36.0 (31.5 - 41.9)	−8.0 {(−0.3) - (−12.7)}
Varanasi	20.4 (10.8 - 33.1)	43.6 (39.8 - 47.0)	23.2 {(29.0) - (13.9)}	34.5 (21.0 - 49.0)	57.3 (51.6 - 61.9)	22.8 {(30.6) - (12.9)}	38.7 (29.3 - 50.2)	32.5 (28.5 - 37.7)	−6.2 {(−0.8) - (−12.5)}

Table B2. Estimates and 95% uncertainty intervals (%) of modern contraceptive prevalence, demand and unmet need for modern contraceptive methods in 2025 and the increase in the modern contraceptive prevalence needed from 2015 to attain 74% met demand for modern methods by 2025. Districts that can't attain 74% met demand for modern methods in 2025 have a shaded display in the last column. (a) Estimates of increase required in MWRA from 2015 using modern contraceptive methods to achieve specified demand satisfied with modern methods by 2025. (b): Estimates and 95% uncertainty intervals of the number of MWRA on modern methods, percentage of demand satisfied with modern methods in 2020 and 2025 and the number of MWRA from 2020-2025 using modern methods.

State/Districts	Percentage of modern contraceptive prevalence (95% uncertainty interval)		Percentage of demand satisfied with modern methods (95% uncertainty interval)		Percentage of unmet need for modern methods (95% uncertainty interval)		Percentage increase in modern contraceptive use for achieving 74%
	2015	2025	2015	2025	2015	2025	
Uttar Pradesh	32.0 (29.8 - 34.1)	39.6 (24.6 - 55.3)	49.5 (44.6 - 53.5)	57.5 (39.2 - 72.9)	32.7 (29.3 - 37.2)	29.1 (19.6 - 41.1)	
Agra	42.4 (38.0 - 46.3)	47.6 (31.3 - 63.7)	59.1 (51.4 - 65.6)	63.9 (44.8 - 78.7)	29.4 (23.9 - 36.3)	26.7 (16.7 - 41.5)	
Aligarh	38.3 (33.9 - 42.2)	43.7 (28.1 - 59.7)	53.4 (46.0 - 59.6)	58.6 (38.7 - 74.2)	33.4 (28.1 - 40.4)	31.0 (19.9 - 46.3)	
Allahabad	35.3 (32.5 - 38.2)	43.2 (28.4 - 58.4)	53.5 (49.0 - 57.5)	60.7 (43.5 - 75.2)	30.8 (27.6 - 34.4)	27.9 (18.7 - 39.2)	
Ambedkar Nagar	19.2 (16.6 - 21.7)	25.6 (13.4 - 41.7)	30.8 (25.2 - 36.0)	38.4 (21.5 - 58.2)	43.3 (37.9 - 50.1)	40.6 (28.8 - 54.5)	
Amethi (CSM Nagar)	23.5 (21.1 - 26.0)	30.6 (17.9 - 46.3)	42.3 (37.8 - 46.4)	49.9 (33.1 - 66.8)	32.1 (28.9 - 36.1)	30.4 (21.3 - 41.2)	
Auraiya	29.6 (26.1 - 32.9)	33.8 (19.1 - 50.5)	44.3 (37.4 - 50.4)	48.6 (28.8 - 67.2)	37.2 (31.7 - 44.2)	35.6 (23.7 - 50.5)	
Azamgarh	26.9 (24.1 - 29.7)	33.0 (18.8 - 49.1)	41.1 (36.2 - 45.4)	47.6 (29.1 - 64.8)	38.6 (34.8 - 43.4)	36.0 (25.1 - 49.4)	
Baghpat	43.8 (38.3 - 48.6)	49.6 (33.2 - 65.3)	57.8 (48.8 - 65.7)	64.4 (45.1 - 79.6)	32.0 (25.0 - 40.3)	27.4 (16.2 - 42.9)	
Bahraich	14.5 (13.1 - 15.9)	24.3 (13.3 - 39.1)	27.4 (24.5 - 30.3)	39.4 (24.2 - 56.9)	38.2 (35.3 - 41.6)	37.1 (27.4 - 48.2)	
Ballia	25.9 (23.1 - 28.7)	32.1 (18.2 - 47.9)	42.9 (37.5 - 47.7)	49.1 (31.1 - 66.4)	34.5 (30.7 - 39.5)	32.9 (22.8 - 45.3)	
Balrampur	4.8 (4.2 - 5.4)	9.9 (4.8 - 19.0)	12.7 (11.2 - 14.4)	22.7 (12.0 - 37.6)	33.0 (30.6 - 35.5)	33.7 (25.2 - 43.6)	
Banda	35.6 (31.7 - 39.3)	41.6 (26.8 - 58.8)	51.3 (44.3 - 57.7)	57.6 (39.2 - 73.9)	33.9 (28.4 - 40.4)	30.6 (19.8 - 45.0)	
Barabanki	23.8 (21.1 - 26.6)	33.8 (19.9 - 50.1)	38.7 (32.9 - 44.0)	49.3 (30.2 - 67.5)	37.9 (33.1 - 43.7)	34.6 (23.1 - 49.0)	
Bareilly	38.9 (35.6 - 42.0)	41.8 (26.8 - 57.4)	58.2 (52.0 - 63.8)	60.2 (41.2 - 75.5)	28.0 (23.6 - 33.4)	27.5 (17.9 - 41.4)	
Basti	16.8 (15.0 - 18.8)	21.3 (11.1 - 35.7)	32.2 (28.6 - 35.6)	37.5 (22.1 - 55.0)	35.5 (32.5 - 39.0)	35.1 (26.0 - 45.8)	
Bijnor	39.8 (36.3 - 43.3)	45.7 (29.8 - 60.9)	59.7 (53.3 - 64.7)	64.6 (46.7 - 78.6)	26.9 (23.0 - 32.3)	24.8 (16.0 - 36.7)	

Continued

Budaun	19.4 (16.7 - 22.1)	26.3 (14.1 - 41.1)	30.6 (24.9 - 36.4)	37.9 (21.5 - 56.4)	43.8 (37.7 - 50.9)	42.5 (29.6 - 56.7)	
Bulandshahr	41.4 (36.9 - 45.3)	47.1 (31.3 - 62.4)	56.2 (48.6 - 62.2)	62.1 (42.7 - 76.8)	32.3 (27.2 - 39.2)	28.7 (18.1 - 43.4)	
Chandauli	37.9 (34.7 - 41.1)	43.1 (28.1 - 59.6)	59.8 (56.0 - 63.4)	64.3 (48.0 - 78.7)	25.4 (23.2 - 28.1)	23.6 (15.4 - 33.3)	
Chitrakoot	40.3 (36.9 - 43.6)	44.9 (29.9 - 60.2)	60.0 (54.8 - 64.4)	63.8 (46.4 - 77.7)	26.9 (23.7 - 31.0)	25.5 (16.7 - 36.9)	
Deoria	27.8 (25.3 - 30.5)	34.9 (21.2 - 50.8)	46.9 (42.8 - 50.9)	54.0 (37.0 - 69.9)	31.4 (28.5 - 35.0)	29.3 (20.4 - 40.2)	
Etah	24.5 (21.7 - 27.2)	32.1 (18.4 - 48.2)	36.5 (31.1 - 41.7)	44.4 (26.4 - 63.1)	42.7 (37.4 - 48.7)	40.0 (26.9 - 54.3)	
Etawah	26.3 (22.9 - 29.7)	32.8 (18.3 - 48.8)	37.5 (31.3 - 43.5)	45.6 (26.3 - 63.7)	43.9 (37.9 - 50.7)	39.1 (26.8 - 54.2)	
Faizabad	25.0 (22.0 - 28.1)	32.3 (18.7 - 47.8)	35.0 (29.9 - 40.1)	43.6 (26.4 - 61.2)	46.5 (41.4 - 52.4)	41.7 (29.3 - 55.5)	
Farrukhabad	23.9 (21.0 - 26.8)	29.7 (16.2 - 45.9)	36.1 (30.5 - 41.3)	42.7 (24.2 - 62.0)	42.2 (37.2 - 48.5)	39.6 (26.9 - 54.4)	
Fatehpur	18.7 (15.8 - 21.6)	24.3 (12.5 - 39.7)	29.1 (22.9 - 35.2)	36.2 (19.5 - 55.0)	45.6 (38.9 - 53.8)	42.9 (30.3 - 56.8)	
Firozabad	29.2 (25.3 - 33.0)	34.6 (20.2 - 51.0)	42.3 (34.9 - 49.3)	48.3 (28.8 - 67.0)	39.8 (33.5 - 47.7)	36.7 (24.2 - 52.4)	
Gautam Buddha Nagar	51.3 (45.4 - 56.1)	55.0 (37.6 - 70.1)	63.4 (54.9 - 70.4)	67.5 (47.6 - 81.6)	29.7 (23.6 - 37.4)	26.5 (15.4 - 43.2)	
Ghaziabad	49.8 (46.3 - 53.2)	52.8 (37.4 - 67.6)	68.9 (63.4 - 73.6)	71.2 (54.2 - 83.3)	22.5 (18.7 - 27.2)	21.3 (13.0 - 33.6)	
Ghazipur	28.5 (25.7 - 31.4)	34.6 (21.5 - 50.5)	47.8 (42.5 - 52.4)	53.7 (36.7 - 69.8)	31.1 (27.6 - 35.8)	29.7 (20.5 - 41.0)	
Gonda	14.4 (12.9 - 16.1)	24.3 (13.3 - 39.2)	27.1 (24.1 - 30.4)	39.3 (23.7 - 56.7)	38.7 (35.6 - 42.2)	37.1 (27.5 - 48.3)	
Gorakhpur	38.8 (35.7 - 42.1)	44.3 (29.4 - 59.6)	53.6 (48.9 - 57.9)	60.0 (42.3 - 74.4)	33.6 (30.1 - 37.7)	29.5 (19.6 - 41.6)	
Hamirpur	39.7 (36.5 - 43.0)	44.4 (29.0 - 60.1)	61.1 (55.9 - 65.3)	64.7 (48.3 - 78.8)	25.3 (22.4 - 29.5)	23.9 (15.5 - 34.2)	
Hapur	51.2 (46.6 - 55.2)	54.3 (38.1 - 69.1)	68.2 (60.7 - 73.8)	71.1 (53.2 - 83.4)	23.8 (19.3 - 30.3)	22.0 (13.0 - 35.4)	
Hardoi	21.3 (19.2 - 23.6)	32.2 (18.6 - 47.4)	36.4 (31.9 - 40.6)	48.3 (31.5 - 65.0)	37.2 (33.6 - 41.8)	34.2 (24.2 - 45.9)	
Jalaun	42.5 (39.1 - 45.6)	47.3 (32.2 - 62.3)	65.2 (60.2 - 69.1)	68.4 (52.2 - 81.1)	22.7 (20.1 - 26.6)	21.7 (14.1 - 31.7)	
Jaunpur	28.9 (26.1 - 31.9)	35.4 (21.3 - 51.0)	44.8 (39.8 - 49.2)	52.2 (34.4 - 68.1)	35.7 (32.2 - 40.4)	32.3 (22.7 - 44.3)	
Jhansi	56.9 (53.2 - 60.4)	58.8 (42.4 - 73.1)	75.3 (70.1 - 79.5)	76.6 (61.6 - 87.1)	18.6 (15.4 - 22.9)	17.8 (10.5 - 28.1)	1.9

Continued

Jyotiba Phule Nagar	44.4 (40.2 - 48.2)	48.6 (32.2 - 63.9)	61.9 (54.6 - 67.5)	65.2 (45.7 - 79.3)	27.3 (22.8 - 33.7)	25.8 (16.1 - 40.1)	
Kannauj	21.5 (19.2 - 24.0)	29.4 (16.6 - 45.1)	34.4 (29.7 - 39.1)	42.9 (25.8 - 60.8)	40.9 (36.5 - 46.2)	39.2 (27.6 - 52.4)	
Kanpur Dehat	26.4 (23.5 - 29.2)	31.4 (18.3 - 46.8)	40.0 (34.2 - 45.0)	45.3 (27.9 - 63.1)	39.6 (35.0 - 45.8)	37.6 (26.1 - 51.4)	
Kanpur Nagar	39.8 (35.4 - 43.8)	43.9 (27.8 - 59.9)	55.3 (47.3 - 61.8)	59.7 (39.2 - 75.0)	32.2 (26.6 - 39.7)	29.7 (18.7 - 45.0)	
Kanshiram Nagar	26.7 (23.3 - 30.2)	28.0 (15.3 - 43.7)	37.3 (31.3 - 43.4)	38.4 (21.3 - 57.0)	44.9 (38.8 - 51.6)	45.1 (31.5 - 59.7)	
Kaushambi	26.0 (23.2 - 29.0)	36.6 (22.2 - 52.9)	39.8 (34.1 - 44.8)	50.7 (32.8 - 68.0)	39.4 (34.8 - 45.2)	35.4 (23.8 - 49.3)	
Kheri	26.9 (24.4 - 29.4)	39.6 (25.3 - 55.4)	44.9 (40.7 - 48.7)	58.1 (41.2 - 73.0)	33.0 (30.2 - 36.4)	28.5 (19.6 - 39.0)	
Kushinagar	29.8 (27.0 - 32.7)	34.8 (20.9 - 50.7)	52.7 (48.8 - 56.6)	56.9 (40.1 - 72.2)	26.7 (24.4 - 29.5)	26.2 (18.3 - 35.3)	
Lalitpur	59.1 (55.7 - 62.3)	63.2 (47.5 - 76.5)	74.9 (70.1 - 78.6)	78.3 (63.8 - 88.0)	19.8 (16.8 - 24.0)	17.3 (10.2 - 28.1)	4.1
Lucknow	39.6 (36.2 - 43.1)	44.1 (29.3 - 59.5)	58.8 (52.6 - 63.8)	62.9 (45.3 - 77.2)	27.8 (23.8 - 33.2)	25.9 (16.9 - 38.4)	
Mahamaya Nagar (Hathras)	34.9 (30.5 - 39.1)	39.0 (23.2 - 56.3)	46.9 (39.7 - 53.9)	51.1 (31.5 - 69.4)	39.4 (33.0 - 46.8)	37.2 (23.9 - 53.6)	
Mahoba	49.0 (44.1 - 53.1)	52.3 (36.4 - 67.8)	67.3 (59.0 - 73.9)	70.2 (51.0 - 83.4)	23.8 (18.5 - 30.9)	22.1 (13.0 - 36.9)	
Mahrajganj	33.1 (30.6 - 36.0)	42.0 (26.6 - 57.5)	58.0 (54.7 - 61.5)	64.9 (48.8 - 78.8)	24.0 (21.9 - 26.1)	22.6 (14.9 - 31.5)	
Mainpuri	24.6 (21.4 - 27.7)	30.0 (17.0 - 45.9)	35.8 (29.8 - 41.0)	42.1 (24.9 - 60.6)	44.1 (38.9 - 50.8)	41.0 (28.9 - 54.9)	
Mathura	43.6 (39.6 - 47.3)	47.9 (32.4 - 64.0)	59.8 (53.4 - 65.0)	63.6 (45.6 - 78.0)	29.3 (25.2 - 35.2)	27.3 (17.4 - 40.8)	
Mau	22.4 (19.6 - 25.2)	28.0 (15.0 - 43.9)	37.7 (31.5 - 43.1)	43.3 (24.9 - 62.2)	37.0 (32.2 - 43.8)	36.1 (25.1 - 49.5)	
Meerut	46.8 (42.6 - 50.7)	53.2 (37.3 - 68.4)	65.8 (58.5 - 71.8)	71.3 (54.3 - 83.7)	24.3 (19.6 - 30.6)	21.2 (12.8 - 34.1)	
Mirzapur	43.1 (40.0 - 46.2)	51.9 (36.8 - 66.5)	61.5 (56.8 - 65.3)	69.5 (53.4 - 81.6)	27.0 (24.2 - 30.8)	22.9 (14.5 - 33.9)	
Moradabad	40.8 (36.3 - 44.9)	45.2 (28.5 - 60.9)	56.7 (48.6 - 63.3)	60.3 (39.8 - 76.1)	31.3 (25.6 - 38.4)	29.7 (18.5 - 45.5)	
Muzaffarnagar	45.7 (41.6 - 49.5)	51.4 (35.3 - 66.6)	62.4 (56.0 - 67.9)	67.6 (49.5 - 81.1)	27.5 (23.0 - 33.2)	24.5 (15.0 - 38.1)	
Pilibhit	41.5 (37.7 - 45.0)	44.2 (28.4 - 60.2)	58.4 (52.0 - 64.1)	61.0 (41.9 - 76.6)	29.6 (24.8 - 35.1)	28.1 (17.9 - 42.7)	
Pratapgarh	28.0 (25.3 - 30.9)	35.0 (21.0 - 51.1)	46.0 (40.8 - 50.6)	52.9 (35.1 - 69.8)	32.9 (29.4 - 37.5)	30.8 (21.2 - 42.5)	

Continued

Rae Bareli	22.6 (20.2 - 25.1)	29.1 (16.6 - 44.1)	42.3 (38.2 - 46.4)	48.9 (32.2 - 65.0)	30.7 (27.9 - 34.3)	30.1 (21.5 - 40.4)
Rampur	38.8 (35.2 - 42.2)	43.4 (27.9 - 59.5)	55.7 (49.0 - 61.1)	59.5 (40.5 - 75.2)	30.9 (26.5 - 37.0)	29.4 (19.0 - 43.7)
Saharanpur	46.2 (41.8 - 50.2)	51.4 (35.6 - 66.7)	62.0 (54.8 - 67.6)	67.4 (49.3 - 80.7)	28.4 (23.6 - 34.8)	24.9 (15.2 - 38.7)
Sambhal	40.7 (36.1 - 44.9)	45.3 (29.8 - 61.2)	56.5 (48.4 - 63.5)	61.1 (41.8 - 76.6)	31.4 (25.4 - 38.9)	28.8 (17.8 - 43.7)
Sant Kabir Nagar	17.1 (15.2 - 19.1)	26.3 (14.6 - 41.2)	30.4 (26.4 - 34.3)	41.3 (25.1 - 58.7)	39.2 (35.4 - 43.8)	37.2 (27.0 - 48.9)
Sant Ravidas Nagar (Bhadohi)	32.5 (29.6 - 35.5)	39.2 (23.7 - 54.7)	49.3 (44.5 - 53.7)	56.7 (38.1 - 72.3)	33.4 (29.9 - 37.7)	29.8 (20.0 - 42.1)
Shahjahanpur	29.2 (26.1 - 32.3)	36.2 (21.5 - 52.0)	44.9 (38.9 - 50.7)	51.3 (32.0 - 68.1)	35.9 (30.9 - 41.7)	34.1 (23.0 - 48.7)
Shamli	45.3 (40.9 - 49.1)	50.4 (34.0 - 65.6)	61.8 (54.5 - 67.5)	66.1 (47.7 - 80.3)	28.0 (23.4 - 34.5)	25.6 (15.6 - 39.7)
Shrawasti	8.7 (7.7 - 9.8)	16.9 (8.3 - 30.0)	18.7 (16.3 - 21.4)	30.8 (16.8 - 47.7)	37.6 (34.4 - 41.3)	37.8 (28.2 - 48.8)
Siddharthnagar	17.2 (15.3 - 19.2)	25.6 (14.1 - 40.2)	27.6 (23.8 - 31.3)	37.7 (21.8 - 55.3)	45.0 (40.9 - 49.7)	42.0 (31.0 - 54.4)
Sitapur	30.6 (28.3 - 33.1)	42.3 (27.4 - 57.9)	51.4 (47.3 - 55.2)	61.5 (43.8 - 76.3)	28.9 (26.1 - 32.3)	26.1 (17.3 - 37.3)
Sonbhadra	41.4 (38.3 - 44.4)	48.9 (33.4 - 64.3)	61.1 (56.6 - 65.0)	67.1 (50.8 - 80.3)	26.4 (23.5 - 30.1)	23.8 (15.3 - 34.7)
Sultanpur	25.3 (22.8 - 28.0)	32.6 (19.3 - 48.8)	44.4 (40.3 - 48.5)	52.5 (35.8 - 69.1)	31.7 (28.7 - 35.1)	29.4 (20.7 - 39.4)
Unnao	27.5 (24.6 - 30.5)	34.2 (20.2 - 50.0)	43.3 (37.5 - 48.5)	50.4 (31.8 - 67.6)	36.0 (31.5 - 41.9)	33.8 (23.0 - 46.9)
Varanasi	43.6 (39.8 - 47.0)	49.2 (33.1 - 64.7)	57.3 (51.6 - 61.9)	63.5 (45.2 - 77.9)	32.5 (28.5 - 37.7)	28.2 (17.9 - 42.0)

(a)

State/Districts (Col 1)	Number of MWRA using modern methods in 2015 (Col 2)	Percentage of demand satisfied with modern method by 2025 (Col 3)	Number of MWRA using modern methods in 2025 for demand satisfied with modern method (col. 3) (Col 4)	Increase in the number of MWRA from 2015 - 2025 using modern methods for demand satisfied in 2025 (col. 3) (Col 5)
Uttar Pradesh	11,999,460	57.5	16,514,761	4,515,301
Agra	355,954	63.9	445,146	89,192
Aligarh	259,053	58.6	329,232	70,179
Allahabad	394,431	60.7	537,407	142,976
Ambedkar Nagar	86,048	38.4	127,314	41,266
Amethi	103,935	49.9	150,920	46,985
Auraiya	74,837	48.6	95,275	20,438
Azamgarh	239,340	47.6	326,810	87,470

Continued

Baghpat	103,767	64.4	130,894	27,127
Bahraich	94,752	39.4	177,410	82,658
Ballia	160,687	49.1	221,238	60,551
Balrampur	19,342	22.7	44,428	25,086
Banda	116,592	57.6	151,766	35,174
Barabanki	139,446	49.3	220,193	80,747
Bareilly	305,500	60.2	364,861	59,361
Basti	78,915	37.5	111,158	32,243
Bijnor	256,640	64.6	327,737	71,097
Budaun	106,027	37.9	160,231	54,204
Bulandshahr	267,112	62.1	338,833	71,721
Chandauli	146,374	64.3	185,398	39,024
Chitrakoot	72,877	63.8	90,251	17,374
Deoria	170,447	54.0	238,381	67,934
Etah	78,678	44.4	114,839	36,161
Etawah	77,605	45.6	107,756	30,151
Faizabad	117,707	43.6	169,178	51,471
Farrukhabad	80,787	42.7	111,939	31,152
Fatehpur	88,411	36.2	127,775	39,364
Firozabad	133,980	48.3	176,921	42,941
Gautam Buddha Nagar	174,518	67.5	208,390	33,872
Ghaziabad	328,853	71.2	387,842	58,989
Ghazipur	195,292	53.7	264,384	69,092
Gonda	96,669	39.3	181,316	84,647
Gorakhpur	339,109	60.0	431,195	92,086
Hamirpur	81,603	64.7	101,499	19,896
Hapur	135,230	71.1	159,909	24,679
Hardoi	156,616	48.3	263,440	106,824
Jalaun	141,997	68.4	175,627	33,630
Jaunpur	259,564	52.2	353,559	93,995
Jhansi	241,168	76.6	277,868	36,700
Jyotiba Phule Nagar	148,052	65.2	180,161	32,109
Kannauj	61,822	42.9	94,047	32,225
Kanpur Dehat	85,642	45.3	113,257	27,615
Kanpur Nagar	343,320	59.7	421,301	77,981
Kanshiram Nagar	67,843	38.4	79,140	11,297
Kaushambi	72,145	50.7	112,930	40,785
Kheri	200,967	58.1	329,732	128,765

Continued

Kushinagar	205,720	56.9	267,539	61,819
Lalitpur	150,393	78.3	178,752	28,359
Lucknow	351,517	62.9	435,165	83,648
Mahamaya Nagar	100,652	51.1	125,278	24,626
Mahoba	81,488	70.2	96,834	15,346
Mahrajganj	178,372	64.9	251,761	73,389
Mainpuri	82,860	42.1	112,475	29,615
Mathura	206,869	63.6	253,022	46,153
Mau	90,288	43.3	125,256	34,968
Meerut	302,198	71.3	382,332	80,134
Mirzapur	209,661	69.5	280,910	71,249
Moradabad	218,286	60.3	268,734	50,448
Muzaffarnagar	228,387	67.6	286,009	57,622
Pilibhit	152,648	61.0	180,815	28,167
Pratapgarh	175,978	52.9	245,028	69,050
Raebareli	101,466	48.9	145,552	44,086
Rampur	153,128	59.5	190,767	37,639
Saharanpur	289,210	67.4	358,566	69,356
Sambhal	156,191	61.1	193,208	37,017
Sant Kabir Nagar	54,631	41.3	93,443	38,812
Sant Ravidas Nagar	104,093	56.7	139,627	35,534
Shahjahanpur	157,429	51.3	217,612	60,183
Shamli	111,652	66.1	138,242	26,590
Shrawasti	19,607	30.8	42,487	22,880
Siddharthnagar	82,884	37.7	137,542	54,658
Sitapur	250,816	61.5	385,887	135,071
Sonbhadra	153,436	67.1	201,954	48,518
Sultanpur	120,917	52.5	173,469	52,552
Unnao	154,834	50.4	214,487	59,653
Varanasi	313,345	63.5	393,924	80,579

(b)

State/Districts	Percentage of demand satisfied with modern methods (95% uncertainty interval)		Number of MWRA with demand satisfied with modern methods (95% uncertainty interval)	
	2020	2025	2020	2025
Uttar Pradesh	53.2 (39.9 - 65.0)	57.5 (39.2 - 72.9)	21,400,098 (16,056,085 - 26,143,188)	23,963,784 (16,342,519 - 30,387,560)
Agra	61.6 (46.2 - 73.9)	63.9 (44.8 - 78.7)	555,514 (416,225 - 666,375)	597,201 (418,723 - 735,235)

Continued

Aligarh	55.9 (40.9 - 69.5)	58.6 (38.7 - 74.2)	406,282 (296,978 - 504,890)	441,033 (291,641 - 559,018)
Allahabad	58.1 (45.7 - 69.1)	60.7 (43.5 - 75.2)	696,574 (547,436 - 828,751)	754,451 (540,266 - 934,391)
Ambedkar Nagar	34.3 (21.6 - 48.0)	38.4 (21.5 - 58.2)	164,583 (103,822 - 230,513)	191,136 (106,832 - 290,103)
Amethi (CSM Nagar)	45.7 (32.9 - 57.8)	49.9 (33.1 - 66.8)	217,058 (156,190 - 274,804)	245,771 (162,850 - 329,162)
Auraiya	45.9 (31.1 - 60.2)	48.6 (28.8 - 67.2)	124,858 (84,666 - 163,533)	136,954 (81,013 - 189,450)
Azamgarh	44.1 (30.6 - 56.8)	47.6 (29.1 - 64.8)	421,788 (292,281 - 542,735)	471,351 (288,864 - 642,536)
Baghpat	61.2 (45.3 - 74.4)	64.4 (45.1 - 79.6)	155,827 (115,284 - 189,399)	169,838 (118,949 - 210,037)
Bahraich	35.1 (24.9 - 47.3)	39.4 (24.2 - 56.9)	247,047 (175,447 - 332,832)	287,220 (176,885 - 414,956)
Ballia	45.3 (31.9 - 58.6)	49.1 (31.1 - 66.4)	301,282 (212,484 - 390,203)	338,597 (214,226 - 458,050)
Balrampur	18.8 (12.0 - 27.4)	22.7 (12.0 - 37.6)	81,290 (51,975 - 118,818)	101,785 (53,826 - 168,619)
Banda	54.6 (39.7 - 67.7)	57.6 (39.2 - 73.9)	192,035 (139,638 - 238,147)	209,906 (142,933 - 269,445)
Barabanki	46.3 (33.0 - 59.6)	49.3 (30.2 - 67.5)	290,929 (207,440 - 375,001)	321,616 (196,875 - 439,863)
Bareilly	57.0 (42.5 - 69.3)	60.2 (41.2 - 75.5)	480,585 (357,949 - 583,659)	525,560 (359,396 - 659,635)
Basti	33.5 (22.7 - 45.8)	37.5 (22.1 - 55.0)	168,730 (114,205 - 230,552)	195,380 (115,138 - 286,696)
Bijnor	61.8 (48.0 - 73.1)	64.6 (46.7 - 78.6)	428,041 (332,090 - 506,043)	463,828 (335,504 - 564,103)
Budaun	35.7 (22.9 - 49.5)	37.9 (21.5 - 56.4)	209,407 (134,603 - 290,847)	230,821 (130,653 - 343,243)
Bulandshahr	59.1 (44.5 - 71.5)	62.1 (42.7 - 76.8)	409,684 (308,592 - 495,766)	446,232 (307,028 - 551,827)
Chandauli	61.2 (48.7 - 72.6)	64.3 (48.0 - 78.7)	253,712 (202,201 - 301,061)	276,588 (206,530 - 338,580)
Chitrakoot	61.1 (48.5 - 72.6)	63.8 (46.4 - 77.7)	118,642 (94,198 - 140,792)	128,258 (93,287 - 156,222)
Deoria	50.2 (37.4 - 62.3)	54.0 (37.0 - 69.9)	330579 (246312 - 410195)	368,821 (252,371 - 477,035)
Etah	40.8 (27.6 - 54.8)	44.4 (26.4 - 63.1)	141,024 (95,356 - 189,433)	159,111 (94,655 - 226,015)
Etawah	41.3 (26.8 - 55.6)	45.6 (26.3 - 63.7)	130,812 (85,006 - 176,171)	149,844 (86,282 - 209,358)

Continued

Faizabad	40.1 (27.6 - 53.6)	43.6 (26.4 - 61.2)	202,868 (139,254 - 270,786)	228,476 (138,172 - 320,848)
Farrukhabad	39.4 (26.4 - 53.1)	42.7 (24.2 - 62.0)	143,333 (95,907 - 192,900)	161,059 (91,176 - 233,518)
Fatehpur	31.8 (20.1 - 46.2)	36.2 (19.5 - 55.0)	161,721 (101,888 - 234,900)	190,434 (102,843 - 289,428)
Firozabad	45.0 (29.9 - 58.9)	48.3 (28.8 - 67.0)	222,016 (147,699 - 290,681)	246,908 (147,374 - 342,493)
Gautam Buddha Nagar	65.4 (49.3 - 77.4)	67.5 (47.6 - 81.6)	239,065 (180,235 - 282,784)	255,590 (180,399 - 309,289)
Ghaziabad	69.9 (56.3 - 79.8)	71.2 (54.2 - 83.3)	495,249 (399,144 - 565,885)	523,420 (398,268 - 612,248)
Ghazipur	49.9 (36.8 - 62.5)	53.7 (36.7 - 69.8)	367,657 (271,242 - 460,168)	409,738 (279,927 - 532,578)
Gonda	35.2 (24.4 - 47.0)	39.3 (23.7 - 56.7)	253,385 (175,574 - 338,854)	293,423 (176,618 - 423,167)
Gorakhpur	56.4 (43.4 - 68.3)	60.0 (42.3 - 74.4)	529,355 (407165 - 641107)	583,716 (412,042 - 724,260)
Hamirpur	61.9 (49.4 - 73.2)	64.7 (48.3 - 78.8)	136,422 (108,811 - 161,279)	147,919 (110,298 - 180,142)
Hapur	69.6 (56.1 - 80.1)	71.1 (53.2 - 83.4)	197,635 (159,246 - 227,328)	209,136 (156,583 - 245,413)
Hardoi	43.2 (31.4 - 55.3)	48.3 (31.5 - 65.0)	340,204 (247,611 - 435,812)	394,880 (257,111 - 531,562)
Jalaun	66.2 (54.2 - 76.5)	68.4 (52.2 - 81.1)	237,392 (194,379 - 274,161)	254,102 (193,955 - 301,461)
Jaunpur	47.8 (34.8 - 60.1)	52.2 (34.4 - 68.1)	460,504 (335,289 - 578,788)	520,932 (343,087 - 679,477)
Jhansi	75.6 (63.9 - 84.2)	76.6 (61.6 - 87.1)	344,278 (291,304 - 383,328)	361,726 (290,685 - 411,103)
Jyotiba Phule Nagar	63.3 (48.2 - 75.0)	65.2 (45.7 - 79.3)	226,422 (172,406 - 268,514)	241,713 (169,452 - 293,975)
Kannauj	40.0 (27.5 - 53.0)	42.9 (25.8 - 60.8)	123617 (84757 - 163720)	137,162 (82,628 - 194,481)
Kanpur Dehat	42.2 (28.3 - 56.0)	45.3 (27.9 - 63.1)	146,980 (98,560 - 194,714)	163,377 (100,652 - 227,363)
Kanpur Nagar	57.6 (41.9 - 70.5)	59.7 (39.2 - 75.0)	533,360 (388,340 - 653,170)	572,597 (376,448 - 720,234)
Kanshiram Nagar	35.0 (22.7 - 49.3)	38.4 (21.3 - 57.0)	95,505 (61,988 - 134,461)	108,328 (60,234 - 160,895)
Kaushambi	49.0 (35.6 - 61.7)	50.7 (32.8 - 68.0)	145,921 (105,892 - 183,764)	156,436 (101,134 - 209,797)
Kheri	54.0 (42.1 - 65.5)	58.1 (41.2 - 73.0)	433,358 (338,337 - 526,261)	483,865 (343,132 - 607,552)

Continued

Kushinagar	53.3 (40.6 - 65.2)	56.9 (40.1 - 72.2)	394,965 (301,074 - 482,918)	436,968 (307,742 - 554,824)
Lalitpur	76.8 (65.8 - 84.9)	78.3 (63.8 - 88.0)	209,700 (179,690 - 231,711)	221,761 (180,449 - 248,997)
Lucknow	60.5 (46.6 - 72.1)	62.9 (45.3 - 77.2)	576,949 (443,948 - 687,537)	620,832 (447,504 - 762,390)
Mahamaya Nagar (Hathras)	49.3 (33.7 - 63.8)	51.1 (31.5 - 69.4)	153,014 (104,422 - 197,963)	164,375 (101,254 - 223,057)
Mahoba	68.7 (53.3 - 79.9)	70.2 (51.0 - 83.4)	122,702 (95,228 - 142,816)	130,027 (94,553 - 154,517)
Mahrajganj	61.6 (49.9 - 72.4)	64.9 (48.8 - 78.8)	356,080 (288,620 - 418,577)	389,086 (292,149 - 472,498)
Mainpuri	38.5 (25.5 - 52.4)	42.1 (24.9 - 60.6)	139,283 (92,283 - 189,602)	157,791 (93,602 - 227,418)
Mathura	61.7 (47.9 - 72.9)	63.6 (45.6 - 78.0)	314,338 (244,283 - 371,215)	335,930 (240,559 - 411,933)
Mau	39.8 (26.7 - 53.7)	43.3 (24.9 - 62.2)	171,876 (115,471 - 231,971)	193,939 (111,666 - 278,302)
Meerut	68.9 (55.1 - 79.3)	71.3 (54.3 - 83.7)	477,689 (382,438 - 550,190)	512,850 (390,190 - 601,875)
Mirzapur	67.4 (56.3 - 77.1)	69.5 (53.4 - 81.6)	352,033 (294,090 - 402,753)	376,200 (288,857 - 441,736)
Moradabad	58.5 (42.4 - 71.7)	60.3 (39.8 - 76.1)	335,655 (243,581 - 411,842)	358,575 (236,685 - 452,845)
Muzaffarnagar	65.4 (51.2 - 76.6)	67.6 (49.5 - 81.1)	351,103 (274,836 - 411,282)	376,306 (275,696 - 451,075)
Pilibhit	58.4 (44.1 - 70.3)	61.0 (41.9 - 76.6)	230,705 (174,088 - 277,667)	249,850 (171,546 - 313,799)
Pratapgarh	49.2 (36.1 - 62.1)	52.9 (35.1 - 69.8)	331,743 (243,950 - 418,835)	370,383 (245,338 - 488,166)
Rae Bareli	44.8 (32.6 - 57.1)	48.9 (32.2 - 65.0)	216,163 (157,481 - 275,704)	244,410 (160,918 - 325,204)
Rampur	57.2 (42.8 - 68.7)	59.5 (40.5 - 75.2)	242,453 (181,307 - 290,993)	261,402 (177,865 - 330,206)
Saharanpur	64.7 (50.5 - 76.1)	67.4 (49.3 - 80.7)	435,218 (339,636 - 511,824)	469,554 (343,424 - 562,616)
Sambhal	59.0 (43.4 - 71.4)	61.1 (41.8 - 76.6)	242,982 (178,804 - 293,888)	260,669 (178,351 - 326,807)
Sant Kabir Nagar	37.1 (25.5 - 49.6)	41.3 (25.1 - 58.7)	127,233 (87,671 - 170,072)	146,908 (89,316 - 208,899)
Sant Ravidas Nagar (Bhadohi)	52.8 (39.4 - 65.1)	56.7 (38.1 - 72.3)	181,774 (135,447 - 223,991)	202,259 (135,705 - 257,823)
Shahjahanpur	48.7 (34.3 - 62.2)	51.3 (32.0 - 68.1)	282,134 (198,969 - 360,267)	308,185 (192,234 - 408,988)

Continued

Shamli	64.2 (49.8 - 75.7)	66.1 (47.7 - 80.3)	170,065 (131,805 - 200,450)	181,557 (131,029 - 220,307)
Shrawasti	26.5 (17.4 - 37.7)	30.8 (16.8 - 47.7)	64,325 (42,204 - 91,613)	77,412 (42,277 - 120,015)
Siddharthnagar	34.1 (22.8 - 46.7)	37.7 (21.8 - 55.3)	176,753 (118,341 - 242,416)	202,808 (117,240 - 297,239)
Sitapur	58.4 (46.1 - 69.5)	61.5 (43.8 - 76.3)	514,119 (405,596 - 611,780)	561,691 (400,215 - 696,047)
Sonbhadra	65.1 (53.2 - 75.3)	67.1 (50.8 - 80.3)	259,245 (211,756 - 299,798)	276,808 (209,646 - 331,233)
Sultanpur	47.4 (35.4 - 60.2)	52.5 (35.8 - 69.1)	243,623 (181,598 - 308,989)	279,693 (190,415 - 367,604)
Unnao	46.7 (32.2 - 60.0)	50.4 (31.8 - 67.6)	282,384 (194,498 - 362,811)	315,723 (199,260 - 423,393)
Varanasi	60.5 (46.8 - 72.2)	63.5 (45.2 - 77.9)	467,184 (361,703 - 557,419)	508,162 (361,775 - 623,298)