ACCOUNTABILITY INITIATIVE
research and innovation for governance accountability

Field Notes on Accountability

A Case-Study of Interactive Voice Response System based

Daily Monitoring System in Uttar Pradesh

Field Notes on Accountability

The field notes in this series seek to document accountability mechanisms built into key government programs for service delivery. These include programs such as the National Rural Health Mission, Mahatma Gandhi National Rural Employment Scheme, Public Distribution System, Mid-Day Meals and others.

No.4

The current note assesses the perceived benefits of an IVRS based daily monitoring of Mid-Day Meals scheme in Uttar-Pradesh and examines perceptions of various stakeholders towards it.

Other Field Notes

No. 1: Incentivising Rural Sanitation – The Nirmal Gram Puraskar.

No. 2 : Rogi Kalyan Samitis: New spaces for participation

No. 3: Social Audits in the Public Distribution System: A case study from Andhra Pradesh

Introduction

Between 10.30 am and 12.30 pm every day, headmasters of government-run elementary schools in Uttar Pradesh receive an automated phone call from State headquarters asking them to report on the number of mid-day meals served to school children. In response, headmasters punch in the appropriate number. This data is then uploaded into a software program that generates daily monitoring reports, allowing senior officers to monitor the program, in real time, across the state.

This is Uttar Pradesh's (UP) effort at introducing a technology-driven method to monitor the Mid-Day Meal scheme. Launched in July 2010, this method uses a technology known as Interactive Voice Response System (IVRS) to create a real time database on the number of mid-day meals served in UP's schools. This effort has been extremely well-received within the government and efforts are now underway to scale up UP's experiment across the country.

This field note documents the evolution and implementation of the IVRS system. Through a series of interviews with key stakeholders, including the authors of the system and users (i.e., headmasters and teachers), it aims to capture perceptions about the implementation of this new technology and its potential to improve monitoring of the Mid-Day Meal Scheme.

CENTRE FOR POLICY RESEARCH

Background

Mid-Day Meal Scheme - A Brief Overview

The National Program of Nutritional Support to Primary Education (NP-NSPE) popularly known as the Mid-Day Meal Scheme (MDM) was launched by the Government of India in 2,408 blocks of the country in 1995. In 1998, the scheme was extended to the entire country and today reaches out to over 12 crore children, making it the world's largest school feeding program.[1] Its budget for 2010-11 was Rs. 2,021.78 crores.[2] The program has three key objectives:

- To increase enrolment,
- To boost school attendance and provide nutritional support to children, and
- To reduce caste and community barriers through common dining activities.

MDM in Uttar Pradesh: Implementation Structure and Monitoring Systems

Implementation Structure

In Uttar Pradesh, the MDM is implemented through the Mid-Day Meal Authority (MDMA), an agency under the Department of Basic Education. The MDMA is responsible for overseeing all MDM-related activities, including planning and monitoring the implementation of the scheme. The MDMA is headed by a Director (a senior Government bureaucrat), assisted by an Additional Director, Joint Director, Deputy Directors, Assistant Directors and Finance Controller.

The district is the key implementation unit for MDM. The District Magistrate serves as the district- level nodal officer while the implementation responsibility rests with the District Basic Education Officer (DBEO), an official from the Education Department. The day-to-day implementation rests with the district MDM cell, which is staffed with a District Coordinator and Computer Operator. The district coordinators are responsible for the overall management of the scheme, including collecting data related to implementation (e.g., expenditure and number of meals served) and generating reports.

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[1] "About Mid-Day Meal Scheme," Government of India, Ministry of Human Resource Development (MHRD), Department of School Education and Literacy, <http://education.nic.in/elementary/mdm/index.htm>.
[2] Revised figures from: Department of School Education and Literacy, Ministry of Human Resource Development, Demand No. 58, *Union Budget 2011-12,* p. 195. <http://indiabudget.nic.in/ub2011-12/eb/sbe58.pdf>.

The block follows a similar chain of command. The Sub-Divisional Magistrate (SDM) is the nodal officer and the day-to-day responsibility for implementation rests with the *Assistant Basic Shiksha Adhikari* (ABSA).[3]

At the school level, the responsibility for the daily management of the MDM has been devolved to the *Gram Panchayat* in rural areas and to municipalities in urban areas. Along with the *Gram Panchayat*, the Village Education Committee (VEC), School Management Committee (SMC), or Parent-Teacher Association (PTA) is also responsible for the cooking and supply of the meal. The *Gram Panchayat* may further devolve the supervision, monitoring, and review of the scheme to the VEC/SMC/PTA, as the case may be, which then have to report regularly to the *Gram Panchayat*.[4] Headmasters and teachers are the last and most important link in the MDM implementation machinery.

Reporting and Monitoring Systems

The implementing agency regularly collects data on key financial and implementation indicators such as school-level receipts and expenditures, consumption of food grains, and the number of meals served on a given day in a school. This information, collected from MDM registers maintained at the school-level, is compiled on a monthly and quarterly basis in the form of progress reports. Data from these registers is manually collated and aggregated at the district office.

To institutionalize a monitoring system, the MDMA guidelines mandate the creation of a twelve-member District Task Force under the leadership of the District Magistrate. The DBEO is the Member Secretary of the District Task Force. A similar structure has been created at the block level, where

Figure 1: An MDM register maintained at school level

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[3]Assistant Basic Shiksha Adhikari (ABSA) has been recently renamed as Block Education Officers and recognized at Gazetted Officers with increased pay-scales after the implementation of a Supreme Court judgment of December 8, 2010.
[4] Details of the responsibilities of the *Gram Panchayat*, VEC/SMC/PTA are discussed below.

an eight-member Block Level Task Force has been constituted under Sub-Divisional Magistrates (SDM) to monitor the scheme closely and effectively. Members of the task force are expected to randomly visit at least five schools every month. During these visits, all school registers are expected to be monitored.

Official inspections apart, a number of provisions have been made to ensure regular local government and community monitoring at the school and village level. At the school-level, *Gram Panchayat* may choose to constitute a Standing Committee to oversee the scheme. Alternatively, it can delegate the task of cooking the food to the VEC/SMC/PTA or to members of local institutions such as women's self-help groups. Furthermore, the VEC/SMC/PTA can also be involved in the monitoring of the following: hygiene and cleanliness in cooking, serving and consumption of the meal; nutritional value and regularity of the meal; and timely procurement of good-quality ingredients and implementation of a varied menu. In addition, the village-level body is also supposed to promote social and gender equality, periodically assess the nutritional status of students, and oversee the attendance and retention/completion of status of students. The newly-formed *Mata Abhibhavak Sangh* can also be involved in these tasks.[5]

Weaknesses in the Monitoring System

Despite the institutionalization of such an elaborate monitoring and reporting structure, monitoring for MDM has been weak. Part of the problem is related to implementation, as monitoring is not a high priority in the daily business of the government. Task forces, despite being set up, rarely meet and officials rarely visit schools with the regularity that is expected of them. At the school level, registers are filled largely by the headmasters and teachers, and not, as directed in the government orders, in consultation with the *Panchayat Sachiv* and *Pradhan*. Most crucially, little effort has been made to facilitate effective community participation.

Implementation failures apart, this monitoring system had many design flaws which made effective monitoring difficult. It was in recognition of these design flaws that officials eventually established the IVRS system in 2010. In this section, we detail some of the major weaknesses with the monitoring system, as identified by government officials in Uttar Pradesh (MDMA 2011). These were:

- *Time lag in data collection and analysis*: In the traditional monitoring structure, data was collected manually through school registers and collated at the district level. This process took a minimum of one month, thus making it difficult for district officials to identify and resolve problems at the school level in real time.

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[5]These parent collectives are either not present or are at a very primitive state of existence in the rural areas of Uttar Pradesh as of now. However, it would be interesting to observe the trajectory of these collectives over the next few years.

- *Manual data-entry leading to data errors and manipulation:* The process of preparing monthly reports was both labour-intensive and error-prone (as large amounts of data are being entered manually). In addition, interviews revealed that manual entry allowed for manipulation, since officials could 'adjust' numbers as the data was aggregated across levels of government.
- *District-level aggregation obscures school-specific problems*: Once collected, data was aggregated at the district level with the objective of revealing district-level trends. This high degree of aggregation obscured school-specific problems, thus making it difficult to identify and resolve school specific inefficiencies.

In June 2010, in an effort to address these weaknesses in the monitoring architecture of the MDM, the Government of Uttar Pradesh introduced a new web-based management information system (MIS) that collected implementation information directly from schools in real time using IVRS technology.

Finding a Solution through the IVRS

The idea of adopting technology solutions to the monitoring problem experienced in Uttar Pradesh dates back to 2007, when the MDMA director developed an action plan for using an SMS-based daily monitoring system. Through trial and error, officials narrowed the solution down to Interactive Voice Response (IVR) technology in 2010. The choice of technology as the solution is unsurprising. Across India, most reformists within government have been quick to narrow down their reform efforts to technology. There are two main reasons for this. First, technology reduces the scope for human error and manipulation, and, at the same time, creates the possibility of collecting large amounts of data in real time at little cost – something than manual solutions simply cannot do; this is precisely the problem UP MDM officials wanted to address. Second, and perhaps more importantly, technology solutions are relatively easier to push through reform- resistant bureaucracies. This is because technology solutions are viewed within the bureaucracy as symbols of modernity that enable states to effectively show case their work and enhance their professional status, without upsetting the status quo. Interviews with key officials behind the IVRS attest to this.

Unpacking the IVRS Solution

What is Interactive Voice Response System?

IVR is a technology that allows a computer to interact with human beings through the use of voice and keypad inputs. IVR systems are typically used by corporate houses to service high call volumes and reduce cost.

IVRS in MDM: How it Works

- An automated telephone call is made to the responsible headmaster asking them to key in the number of children who have served MDM that day. This call is made between 10:30am and 12:30pm every morning. If the headmaster/teachers are unable to pick the call, the call is automatically routed to the teachers next in the hierarchy. In all, the system generates calls to 1.52 lakh schools every day of the working week.
- Headmaster/teacher inputs figures for the day.
- Data is electronically collated and analysed by a central server to generate a web-based MIS. This is called the Daily Monitoring System (DMS).
- Daily reports are produced detailing the number of children who have received a mid-day meal through the scheme. Once compiled, the database can be sorted and analysed by various categories in real time (see the Annexure for some sample screen-shots).

If recipient misses the call: The recipient calls a fixed line number that belongs to the server. The system calls the recipient back within five minutes.

If recipient does not respond: The system generates an automatic e-mail that is sent to the relevant district magistrate informing him/her of the lack of response.

If schools significantly under-report: The system recognizes that in a given school, the number of children receiving MDM is significantly lower than what is expected and sends an automated SMS to relevant officials.

Perceived Benefits of the IVRS-based DMS

Given that the use of IVR technology to monitor the MDM is relatively new, it is difficult to empirically assess its effectiveness and impact. However, interviews with officials and stakeholders at the school level reveal a number of interesting perceptions about the possible benefits that the technology has brought to scheme implementation. These include:[6]

- *Real time data:* The IVRS enables the collection of precise, real time data on the most important MDM indicator: the number of meals served in a school on a given day. This enables immediate redress and remedial action at the school level. For instance, there are cases where meals are not served because of delays in funds reaching schools. By collecting real time data, these glitches can be quickly identified and action taken.

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[6] Compiled from various interviews and MDMA (2011).

- *Comprehensive monitoring:* The availability of school-level data for all schools enables officials to monitor MDM far more precisely than the traditional system, where officers relied on district-level aggregates to assess implementation status. Officials interviewed also argued that the IVRS enabled better enforcement as they now have at their fingertips a database of mobile numbers which they can draw upon for enquiries/warnings.

- *Potential to increase transparency:* At present the front-end IVR database is only available to officials (this is one of the biggest weaknesses in the system at the moment, as it reduces its transparency impact). However, over time, if this is made public, it could significantly enhance transparency and enable citizens to scrutinize the implementation of the MDM at the school-level.

Headmaster and Teacher Perceptions of the IVRS

The most important links in the Daily Monitoring System are the headmasters and teachers who supply the information. How have these crucial links in the chain responded to the IVR system? To capture their perspectives, this researcher interviewed a group of headmasters and teachers in Hardoi district, Uttar Pradesh. The interviews reveal interesting insights in to the strengths and weaknesses of the DMS.

Almost all the headmasters and teachers interviewed acknowledged and appreciated the simplicity of the technology. "Entering the data into the mobile hardly takes any time. We were anyway making the entries in the MDM register and so we don't see any harm in the project."[7] However, questions do arise about the quality of data reported. Activists in the area argue that fake reporting is especially high amongst schools located in remote areas. When interviewed, some headmasters/ teachers did confess to fake reporting and argued that this happens when they receive telephone calls requesting information while they are out of the school on official work. This points to a larger structural problem with the current implementation and monitoring system for MDM.

The IVRS makes the headmaster/ teacher the primary respondent and, *de facto*, the principle authority that is accountable for the implementation of the MDM scheme in the school. However, from the teachers' point of view, the failure to effectively implement MDM is often a consequence of larger structural issues, such as irregularities in supplies from the FCI, shortage of teachers especially amongst schools with a high pupil-teacher ratio, lack of

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[7] Interview with Headmaster, *Poorva Madhyamik Vidyalaya*, Kursath Bujurg, Madhavganj, Hardoi (6 July, 2011)

motivation and too many administrative responsibilities. In the absence of any visible efforts to deal with these structural problems, the IVRS and IVRS-like solutions have created a sense of being policed, which can, in fact, create perverse incentives for fake reporting and lead to larger concerns of teacher motivation. As one headmaster argued, "The problems associated with MDM have not improved in any way through this project."

Conclusion

The IVRS presents itself as an important tool with which transparency in the implementation of the Mid-Day Meal Scheme can be enhanced. The use of this relative simple technology cuts down on the time and resources that would have otherwise been required to monitor the scheme. Yet, despite the perceived advantages of the system – real-time data, comprehensive and less time-consuming monitoring, and potential increase in transparency – structural gaps still remain. In January 2012, the Central Government announced that Uttar Pradesh's solution to enhance accountability in the MDM scheme implementation will be scaled up to the rest of the states.[8] However, issues such as the widespread shortage teachers, lack of teacher motivation, and fake reporting, among others, all point to wider structural problems that must be addressed simultaneously if the IVRS is to prove a success at the national-level.

[8] Hindustan Times, *Mayawati's food tracking system for schools HRD nod*, January 30, 2012

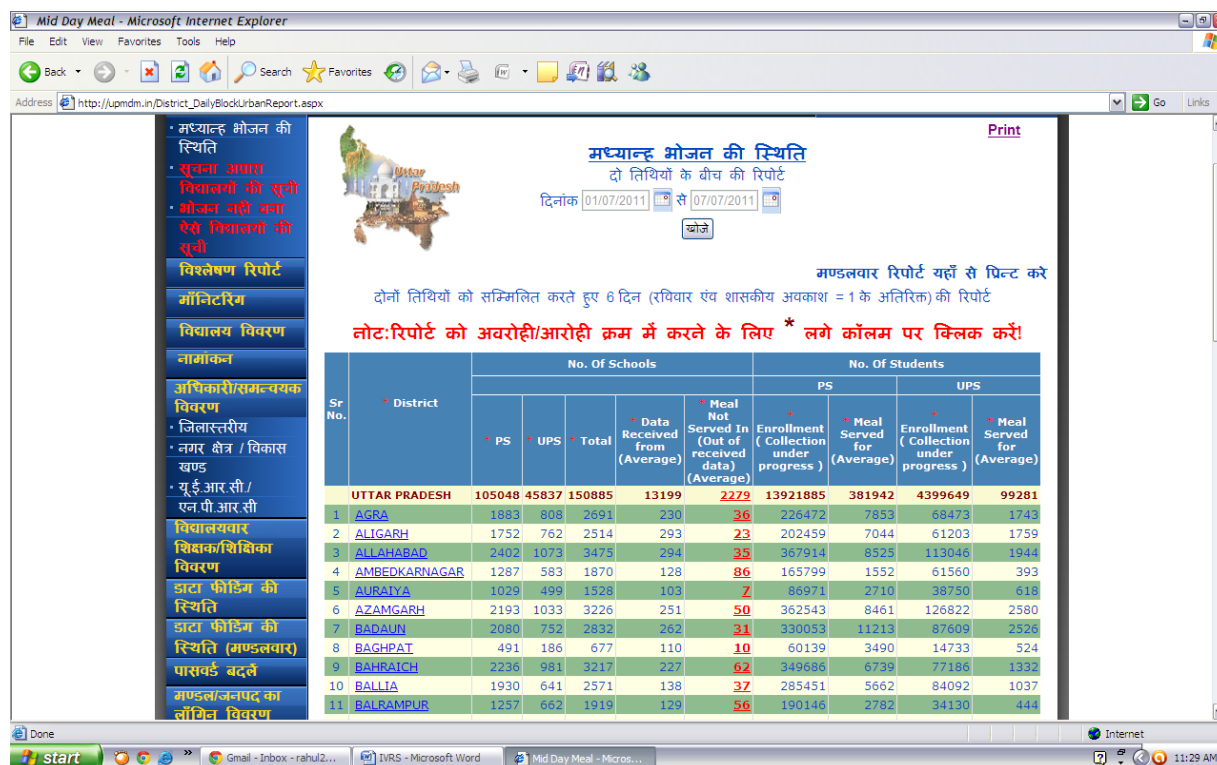## Annexure: Sample screen-shots of the monitoring MIS

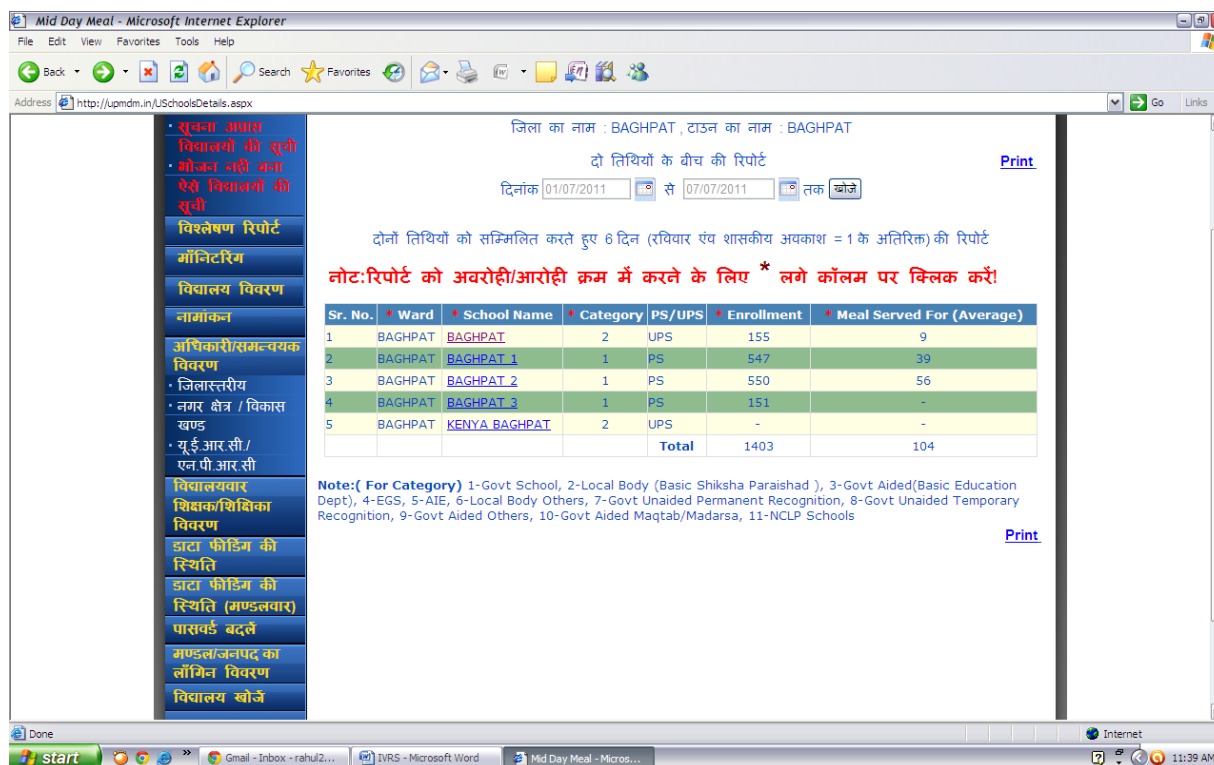**Figure 1: District-Wise Status of MDM over a period of one week**

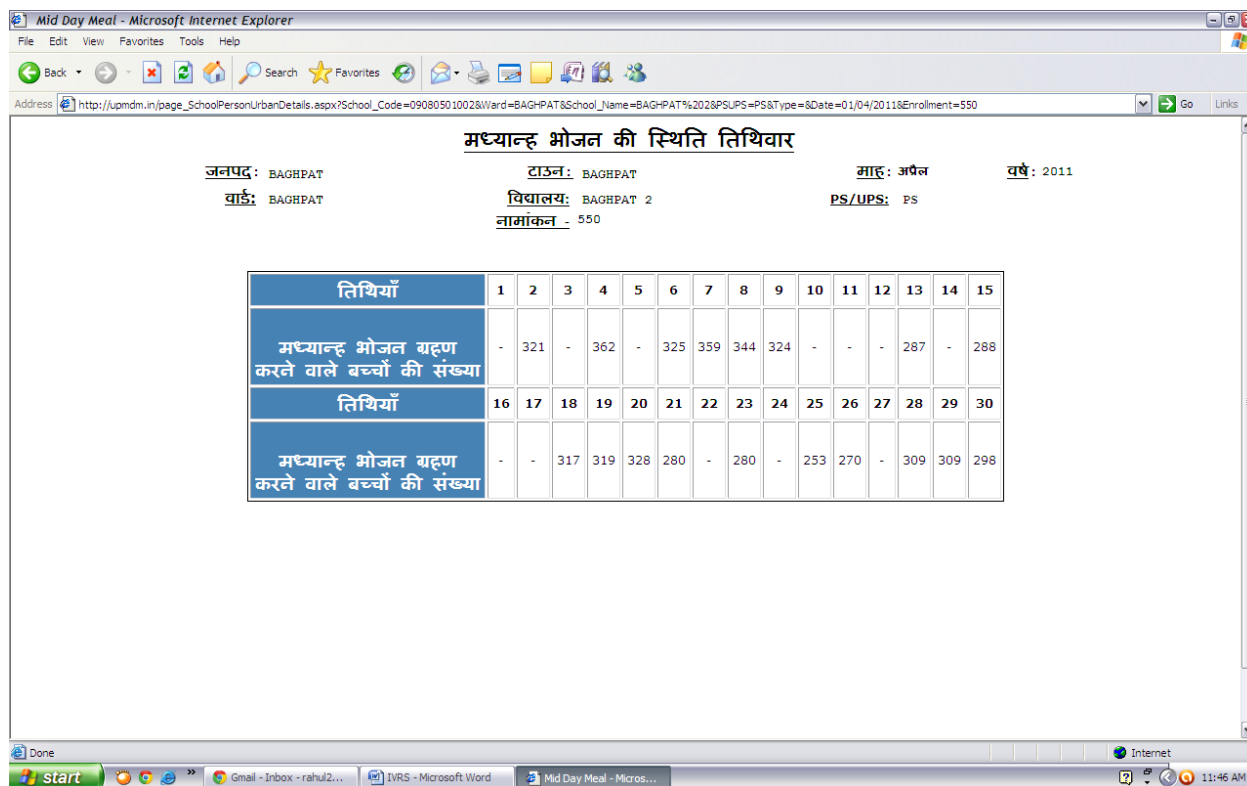**Figure 2: School-Wise Status of MDM over a period of one week in one town**

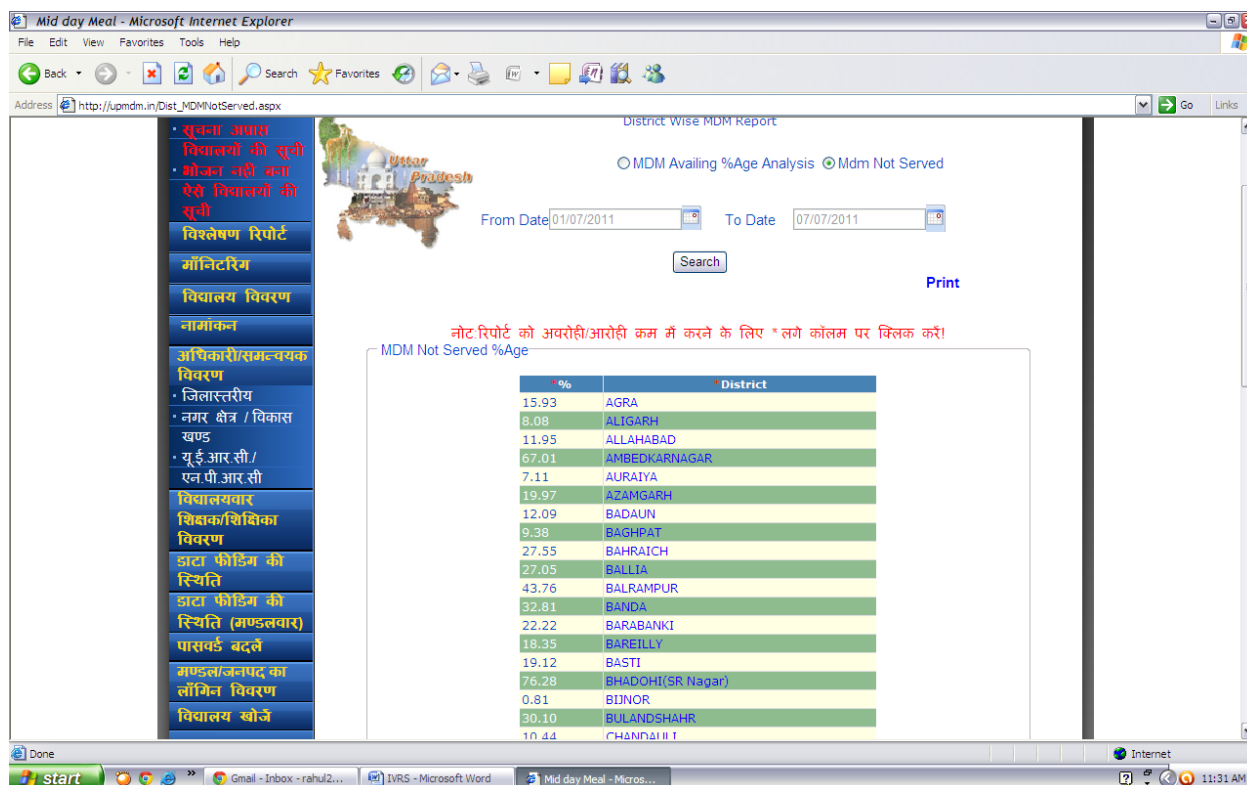**Figure 3: School-Level report of MDM for a period of one month**

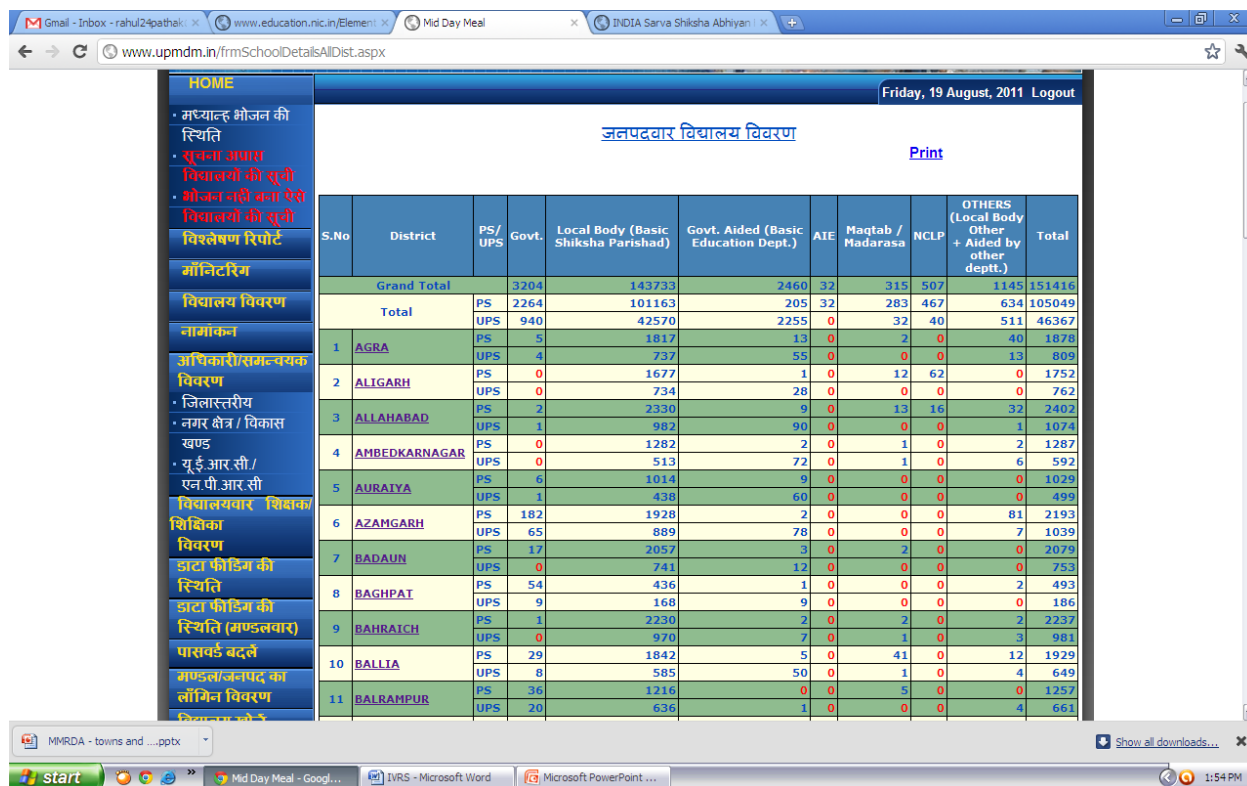**Figure 4: District-Wise Status Monitoring Report for a period of one week**

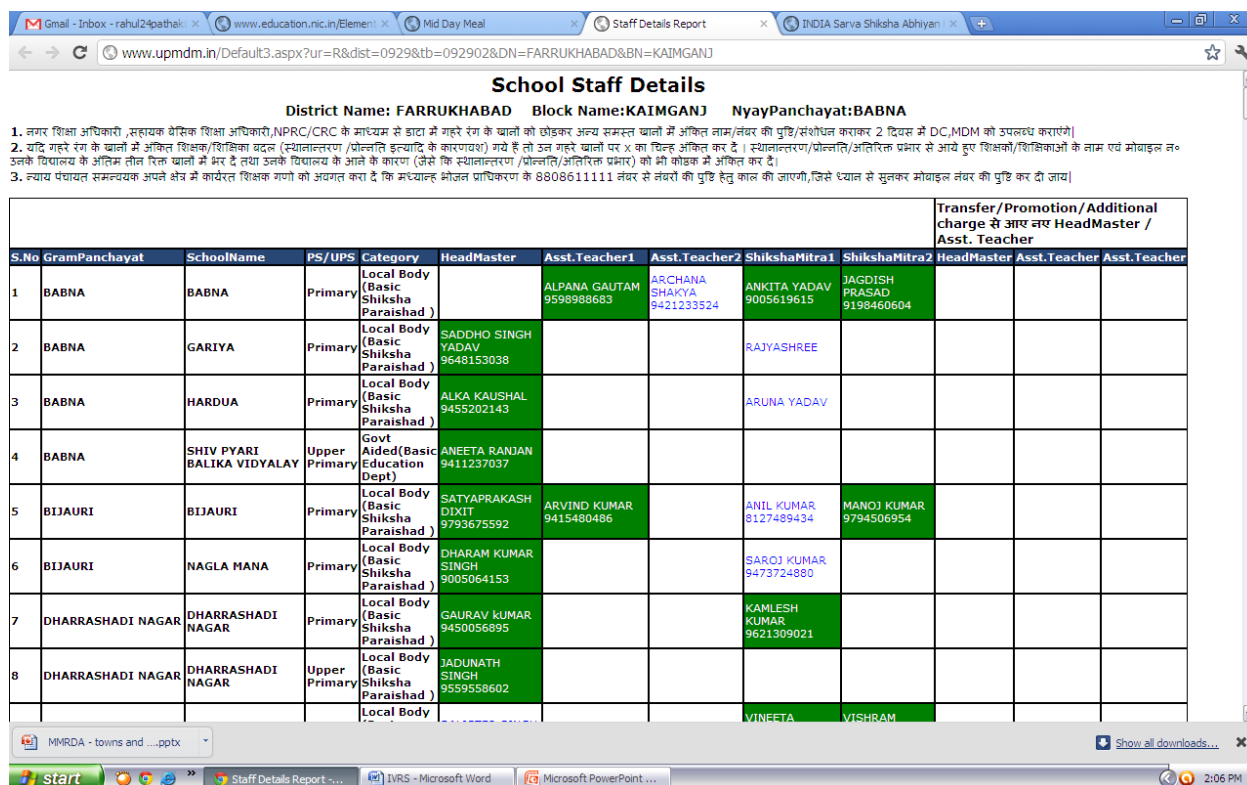**Figure 5: District-Wise Data of Schools across various categories**

Figure 6: Block-Wise School Category and Staff Details

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