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Research Article

Revolutionizing Social Benefit Delivery: AI with Human Touch

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ABSTRACT

US social agencies have witnessed more operational challenges during and after the COVID-19 pandemic. Generally, a social agency needs to be prepared to serve its changing population every month; however, its resources are often limited. This paper covers two key measurements defined by Food and Nutrition Services (FNS) and how emerging technologies using AI can improve operational efficiencies.

Keywords: Application Processing Timeliness (APT), Case and Procedural Errors Rate (CAPER), Intelligent Document Processing (IDP), Robotic Process Automation (RPA), AI Co-Pilot, Health and Human Services Automation, Food and Nutrition Services (FNS).

1. Introduction

Social agencies face constant challenges in efficiently and effectively serving the needy population. Regulatory authorities in the US, like Food and Nutrition Services (FNS), monitor these efficiencies through various measures, such as the Application Processing Timeliness rate, Case And Procedural Error Rate (CAPER), and Payment Error Rate. Limited staff and resources make it more challenging to manage the delivery for a fluctuating population.

This paper will primarily cover two aspects of efficient benefit delivery: Application Processing Timeliness and accuracy of actions and procedures (as measured by CAPER).

Post and pre-pandemic impact is visible; most states are struggling to bring back their performance or make further improvements.

3. Emerging Technology to the Rescue

Automation while keeping the human touch at the core will help improve accuracy and timeliness.

3.1. Application processing timeliness

The key obstacles to timely application processing are:

Agency-Caused Delays: Agency-caused delays are when the application is with the agency and no action is taken or no communication is sent to the client. One of the main reasons for this is the backlog, i.e., the agency did not have enough resources to process these applications on time. Another reason could be an inefficient system of record, i.e., caseworkers are often receiving system errors while processing the application, which delays the processing till the issue is resolved.

Client-Caused Delays: Client-caused delays occur when the agency prompts the client for action but the client fails to provide information. This can occur if the communication is unclear or not received on time by the client, e.g., the notice is lengthy and confusing, there is returned mail, or the client cannot respond on time.

The agency should aim to avoid agency-caused delays and minimize client-caused delays. The following technologies can help the Health and Human Services industry meet this goal.

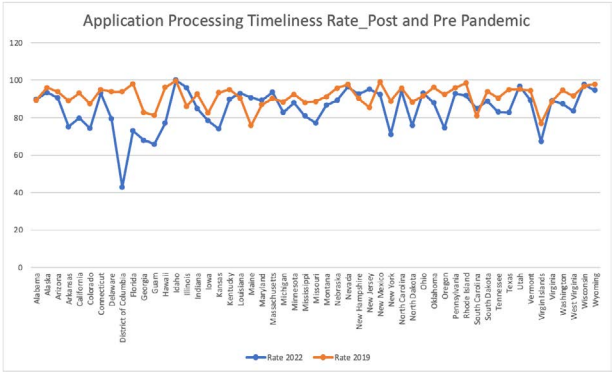

Figure 1: Application processing timeliness rate – pre and post-pandemic.

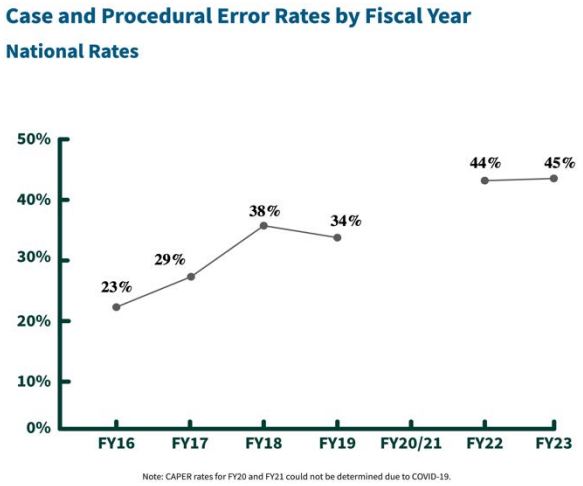

Figure 2: Case and procedural error rates by fiscal year-national rates.

1. **Intelligent Document Processing (IDP)**: As the name suggests, IDP leverages AI to understand scanned documents intelligently. The key attributes of IDP and use cases in Health and Human Services industry are:

a. **Structured and Unstructured Data Extraction**: It can extract data from the application form, driving license, Pay stub etc.

b. **Document Classification**: It can help sort the document into various categories for instance client submits the full package which may include a SNAP application, Medicaid recertification, and residency and income proofs. IDP can sort these documents into respective categories

c. **Accuracy & Exception Handling**: It can score the accuracy of data extraction and the agency can configure when human review is required based on the accuracy rate of extracted data.

d. **Mapping The Data To The System of Record**: Intelligently mapping the extracted data to the eligibility systems can save merit caseworker time.

e. **Continuous Learning and Improvement**: Machine learning is used for self–learning and improvement. It learns based on feedback provided by merit caseworker reviewers while managing exceptions.

IDP can support the caseworker in document processing and data mapping/entry in the system of record, which can save 60-100 minutes per application or more. *(Note: participating households in the SNAP program in the month of April 2024 ranged from 10608 to 3146853. Approx per state average 418885. Source: https://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap)*

2. **Robotic Process Automation (RPA)**: Robotics can help intelligently automate repetitive tasks. Here are some example use cases of RPA that can be implemented in Health & Human Service agencies:

a. **Synchronizing Task and Activity Status**: One of the caseworker's common challenges is updating the task status after working on the related activities to match the activity status with the task status. Many times, agencies need to bulk delete the tasks as they are redundant or may not be required as the associated activity is already complete. RPA can save the caseworker and agency's effort to reconcile these statuses by automatically running this process of validating and updating the task status based on the associated activity status.

b. **Enhance IDP:** RPA can further enhance document processing by creating tasks for the merit staff to review the mapped document for eligibility

c. **Verification with internal and external systems:** RPA can help verify household details from trusted sources.

d. **Returned mail processing:** RPA with OCR/IDP can extract the forwarding address details from the returned mail envelope, update the address in the record system, and regenerate the notice or create the task for the caseworker.

3.2. Accuracy of action and procedure

Health and Human Services agency performance is also measured by how accurately the eligibility of the social benefit is processed. Some of the common parameters where the accuracy of actions fails are:

Procedural Errors: Some common procedure errors are incorrect processing of wages and salaries, Shelter expenses, and household composition.

Incorrect Notices: Incorrect notices can be triggered based on incorrect actions performed on the case**.**

AI and machine learning technology can aid the caseworker in case processing to avoid or minimize these errors. Some of the examples are:

O-piloting: An AI assistant can guide the caseworker based on case data and common errors that have occurred in similar cases. AI assistants can be trained using Job aids, Quality audit recommendations, and Policies.

A real-time caseworker assistant or co-pilot will help provide a safe place for the caseworker to ask questions, catch errors proactively, and guide the caseworker in processing the application.

Process Mining: Business process mining tools can help the supervisor manager track an end-to-end process at the desktop level. This can provide opportunities to compare the standard process and diversion from it. It can further provide insights into the cause of delays and errors. The outcome can be used to train the AI assistant to provide real-time assistance on standard processes to manage error-prone processing.

4. Futuristic View

AI with Human Touch in Health and Human Services will

soon involve AI doing the repetitive work and caseworkers handling more complex or exceptional cases.

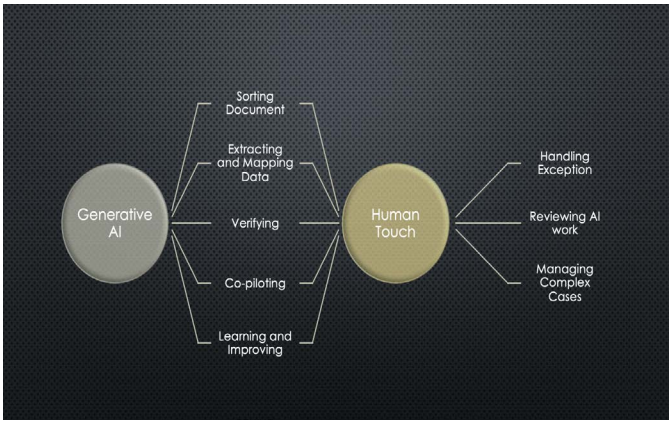

Figure 3: Futuristic view - common and repetitive actions are performed by AI, and focused complex actions are performed by humans.

4. References

1. Snap Application Processing Timeliness (2022) https://www.fns.usda.gov/snap/qc/timeliness
2. SNAP Case And Procedural Error Rates (2023) https://www.fns.usda.gov/snap/qc/caper
3. SNAP data tables – Sates level Participation and Benefits (2024) https://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap.