

# EXECUTIVE REPORT (PART B): PROFESSIONAL WORK-BASED PLACEMENT IN HEALTH DATA SCIENCE

Project Topic: DHS Data Management and Analysis of Gender Inequality in Reproductive Women across LMICs using IPUMS-DHS Dataset

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## Section One: General Reflections

What has gone Well:

- ***Balance between promoting independent work, collaborative work and the right amount of supervisory support to keep me on track:*** This enabled me to grow confident in taking initiatives to explore solutions to problems and present them while escalating the challenge and then receiving feedback on how to proceed. This is a more proactive approach to problem solving rather than escalating a problem and waiting for the solution to be handed to me which is more passive. It has also strengthened my critical thinking skills. The collaborative phase of the project highlighted the gains of team-work including, knowledge sharing and feedback which reinforces learning, unified objective and checking each other which ensures progress.
- ***Access to resource materials and bootcamp trainings:*** The DHS program website is replete with information about the program, datasets, how to use them along with trainings and resources all of which are very useful, yet can be overwhelming initially, however , the bootcamps trainings provided by my host which delved into microdata analysis for topic specific research and how they are used for analysis as well as result interpretations and implications, helped me to translate and connect these informations to applicable outcomes and usage. Hence eliminating the overwhelm and sparking my curiosity to constantly engage with the resources and every new learning was met with an appreciation for the dept of rigour that goes into global health research
- ***Regular Review Meetings with my Supervisors:*** I had regular review meetings both physical and online with my supervisors and peer which provided clarity on my project tasks, tackled challenges and provided feedback on my progress and arears I needed to work on, all of which were pivotal for my growth.The meetings provided a safe space for me to be innovative as well as share my concerns when stuck and receive guidance.

- **Workplace wellbeing:** A comfortable workspace was provided for me with accessibility to my supervisors which made me feel included in the team. Also, I was invited to team-wide monthly meetings which helped me familiarize with the team and the nature of work that goes on within an academic research and teaching organisation like the BHDS. This gave me a sense of responsibility as part of a wider unit and made me feel welcome while also challenging me to contribute positively to the team. Additionally, the flexible workhour enabled me to manage my personal commitments with work-based placement activities. Hinderances to my productivity in terms of health and other personal conflicting priorities were properly communicated in a professional manner and was met with empathy and support from my supervisors which contributed positively to my wellbeing.

#### What has not gone so well:

- **Storage challenge due to data volume:** A more harmonized IPUMS DHS dataset requiring less computational resource was used, hence optimizing available memory space.
- **Personal device limitation:** My personal device was limited in capacity and speed to handle the large data set which lagged it down making me resort to using the institution devices. I had to trade off the flexibility of working remotely with the better functionality and efficiency of using the school computers. While this seemed like a constraint, it helped me hone my skills in the use of Github for version control, tracking and checking reproducibility of my analysis across devices.
- **Time constraint:** I was constrained by time to reduce the scope of my project which included reducing the file merging activity of all DHS IR datasets to a pilot merge of IR Datasets from two countries with syntax that are reproducible for datasets with similar variable sets.
- **Problem solving fixation:** I spent time exploring the most efficient solution to a problem to the point of fixation. I learnt the need to be willing to adopt more feasible solutions based on the resources available.

#### Achievement Highlight:

- I now approach challenges with confidence.
- I developed problem solving skills.
- I improved on my R Skills: Learnt how to use Plotly and Quarto for interactive visual presentation and Data wrapper to create interactive visual maps and embed the html widget in Quarto.
- Practiced file naming conventions and documentation best practices for collaborative and reproducible science, most importantly, I learnt how to study documentations of scientific projects and replicate them.
- I learned how to use GitHub, Git bash, Git User interface for version control both on my local machine and remotely while following best practice (including naming conventions) for reproducible science research.

- Ability to prioritize tasks based on objectives and timeline.
- Ability to identify and deal with disappointment (rotten tomatoes): Identify, isolate, address, refocus.

#### Role Change:

Agreed roles from the signed roles and responsibility agreement were consistent all through the program, however dataset specified for the project was changed at the analysis phase from DHS to IPUMS-DHS.

The reason for this change was limited storage, affecting only the dataset. This however, gave me the opportunity to learn database management skills and develop good practices relating to cloud storage systems.

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## Section Two: Contribution to Organisation

Please complete the table below with your contributions. If there is anything that you feel is missing, please type it below the table.

Communication Skills	<ul style="list-style-type: none"> <li>- I had regular meetings, review and feedback sessions with my host both physically and online as I progresses on the project. During the meetings, I listened actively, took notes and shared the major highlights of the meeting afterwards with the team</li> <li>- I shared my progress, challenges, concerns and questions in a professional manner with my host via emails and teams chat and received helpful feedback and guidance.</li> <li>- I kept record of deliverables and referenced them in my written communications where appropriate.</li> </ul>
Teamwork and Collaboration	<ul style="list-style-type: none"> <li>- The first part of my project was a shared task with another student and we worked together on the downloads manually before I resorted to automation. We checked each other during the download to ensure consistency in filing/naming, avoid duplicate download as well as processing a download task at the same from DHS website all of which promotes data quality.</li> <li>- I had regular project review meetings with my supervisor, where I shared my progress, challenges and suggestions to address them and which we then explore together and decide on a workable solution.</li> </ul>

	<ul style="list-style-type: none"> <li>- The roles and responsibility agreement assessment was also done in collaboration with my supervisor.</li> </ul>
Problem Solving Abilities	<ul style="list-style-type: none"> <li>- I was able to navigate the problem of limited by suggesting the use of IPUMS DHS dataset which was faster and easier to use for a pooled cross-country analysis.</li> </ul>
Adaptability and Flexibility	<ul style="list-style-type: none"> <li>- I adjusted to a significant change in my project dataset, switching from DHS to IPUMS-DHS due to storage limitations. This required me to study the code documentation and learning how to extract data using code commands.</li> <li>- I managed the challenge of limited capacity and speed of my personal device by shifting to use the institution computers. Although this meant trading off remote work, I embraced this constraint positively by using the opportunity to improve my skills with GitHub for version control and reproducibility across devices.</li> <li>- I effectively prioritized tasks and compressed the work scope with guidance from my supervisors to cope with time constraints, focusing on pilot merge of datasets rather than a full-scale project.</li> <li>- I communicated personal health challenges or conflicting priorities professionally and received empathetic support, which helped maintain my wellbeing and productivity while balancing personal commitments.</li> </ul>
Leadership Skills	<ul style="list-style-type: none"> <li>- Although my supervisors set the key objectives for my project, I demonstrated leadership by independently managing the entire analysis phase. I took the initiative to define the scope of the analysis, draft research questions and develop a statistical plan which was refined through collaboration with my supervisor. I selected the most effective methodology and analytical tools for each phase of the project and took accountability for completing my tasks, including proactively requesting additional time when necessary to meet delivery expectations.</li> </ul>

**Anything else? – please enter below or type ‘Not applicable’.**

Networking: I participated in the BHDS organization-wide monthly team meetings, where I introduced myself and shared insights about my project. Through these interactions, I established valuable professional networks within the team. As a result, I was given the

opportunity to present my project to the team on the 3<sup>rd</sup> of September which I look forward to.

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### Section Three: Upward Feedback

- I feel I would have benefited more from collaborating with a peer that had similar data science skills in addition to their domain knowledge.