

IDS 560 Analytics Strategy and Practice Capstone Project Report Spring 2023

Project #7

Client: Rooshey Hasnain

Dept. of Disability & Human Development

Analysis of Employment Disparities Among Disabled People within various Ethnic and Racial Backgrounds

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Project and Client Introduction

Statement of Work:

Using public data sets to run data analytics to show employment disparities among people with disabilities from diverse ethnic and racial backgrounds.

Client:

Professor Rooshey Hasnain
Department of Disability and Human Development
The University of Illinois at Chicago

Client Introduction:

As a highly respected expert in disability and human development, Dr. Hasnain has dedicated her career to understanding the lives, challenges, and strengths of people with disabilities, particularly those from refugee and immigrant backgrounds. She is committed to reducing the cultural stigma associated with disability and mental health issues and promoting a human rights perspective for disabled individuals, their families, and their communities.

Dr. Hasnain's passion for improving the lives of people with disabilities is evident in the numerous projects she has founded. Many of these projects aim to bridge the service and opportunity gaps between U.S. disability service systems and hard-to-reach disabled people and their families.

Dr. Hasnain is the Principal Investigator for a NIDILRR field-initiated project called Partners of Refugees in Illinois Disability Employment (PRIDE). This project seeks to support job-seeking refugees with disabilities accessing employment and career opportunities in Illinois.

Project Overview:

This capstone project aims to identify employment disparities among people with disabilities of Middle Eastern ancestry.

To achieve this, we collected data from the census M data. We built a database to analyze income, job type, education, housing, vehicle, and income-to-poverty ratio. We then used this data to create Business Intelligence (BI) reports comparing disabled and non-disabled individuals within the Middle Eastern community.

The project is essential because employment disparities among people with disabilities are significant, especially for individuals from underrepresented ethnic and racial backgrounds. Our project will help shed light on these disparities.

Additionally, our project will help increase awareness of the challenges faced by individuals with disabilities from Middle Eastern ancestry.

Our project will contribute to the ongoing efforts to reduce employment disparities among people with disabilities from diverse ethnic and racial backgrounds. We are excited to present our findings in the final report.

Why Middle Eastern Ancestries:

According to our client,

The importance of Middle Eastern studies lies in the fact that people from this region have been historically underrepresented in research studies, particularly when it comes to disability studies. As a result, there is a lack of understanding of the unique challenges and strengths of individuals with disabilities from Middle Eastern backgrounds. This can lead to a lack of appropriate support and services for these individuals.

Moreover, research studies focusing on disability in other ethnic groups, such as Hispanic or African origin, cannot necessarily be applied to individuals with Middle Eastern ancestry. Middle Eastern cultures and societies have their unique values, beliefs, and practices regarding disability, which need to be taken into consideration when designing and implementing disability-related services and policies.

Therefore, it is critical to conduct research and studies focusing on disability among individuals of Middle Eastern ancestry to improve our understanding of their unique needs and to develop interventions and support programs that are culturally appropriate and effective.

Value to Client:

The value of this project to our client lies in the insights we provided regarding employment disparities among people with disabilities of Middle Eastern ancestry.

Our client is interested in addressing these disparities, and our project can provide valuable information to support these efforts.

Using our Excel and BI reports will allow gaining vast insights from the 2021 American Community Survey 5-year estimates data.

We collected the 2021 American Community Survey 5-year estimates data in an Excel file and provided it to our client for further analysis.

The BI report provided visual representations of the data, allowing our client to identify trends and patterns that may not be immediately apparent in raw data.

The BI reports compared disabled and non-disabled individuals across various variables: income, job type, education, housing, vehicle, and income-to-poverty ratio. This will provide valuable insights into employment disparities among individuals with disabilities from Middle Eastern ancestry.

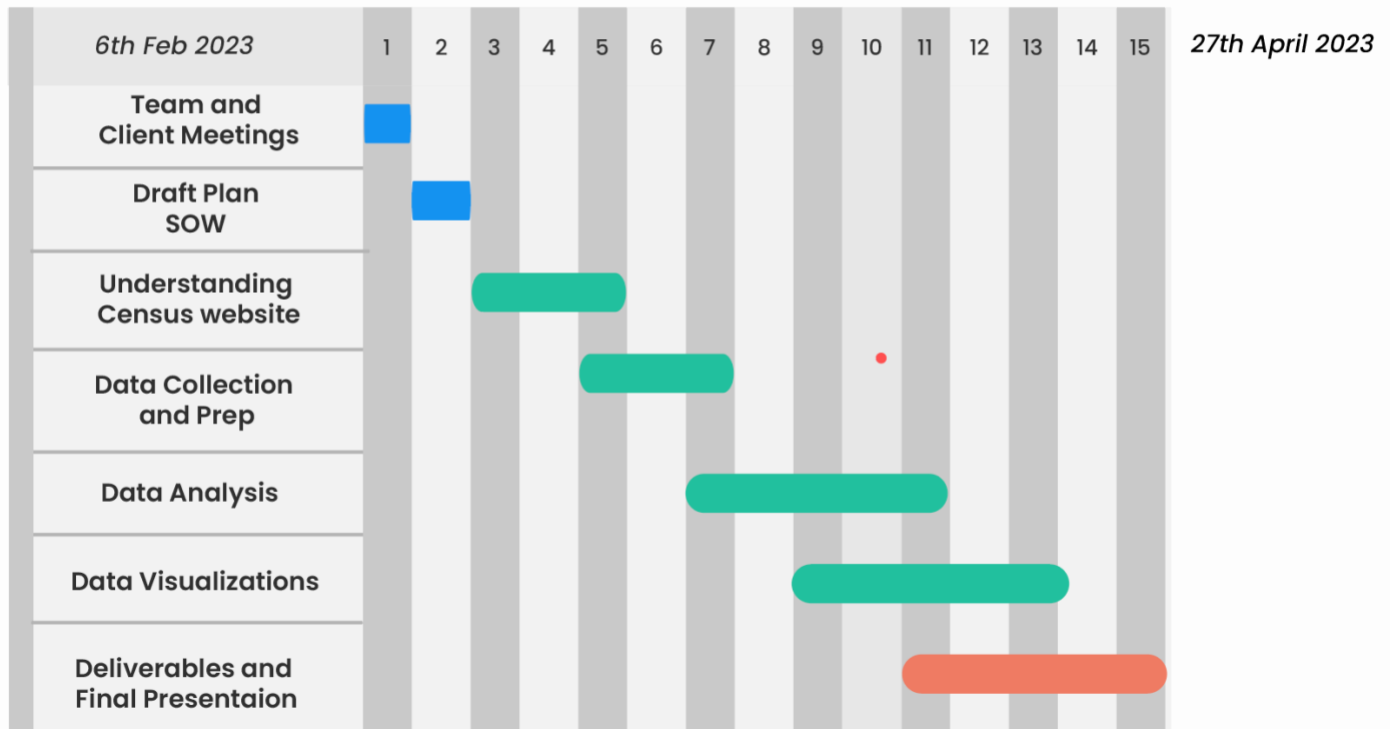
These insights are based on rigorous analysis of data. They are presented in a clear and accessible format, allowing to take informed action for further work.

Original Gantt Chart:

GANTT CHART

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Employment Disparities Among People with Disabilities from Diverse Ethnic Backgrounds



Following our initial meetings with the team and clients during the first week, we dedicated one week to devising a draft plan, comprehensively understanding the problem statement, and determining the most effective approach to address the issue.

We identified the need to extract data from the Census website, which houses various datasets. We allocated three weeks to comprehend the Census website and its offerings fully.

Subsequently, we embarked on the Data Collection and Data Preparation phases, for which we allotted an additional three weeks.

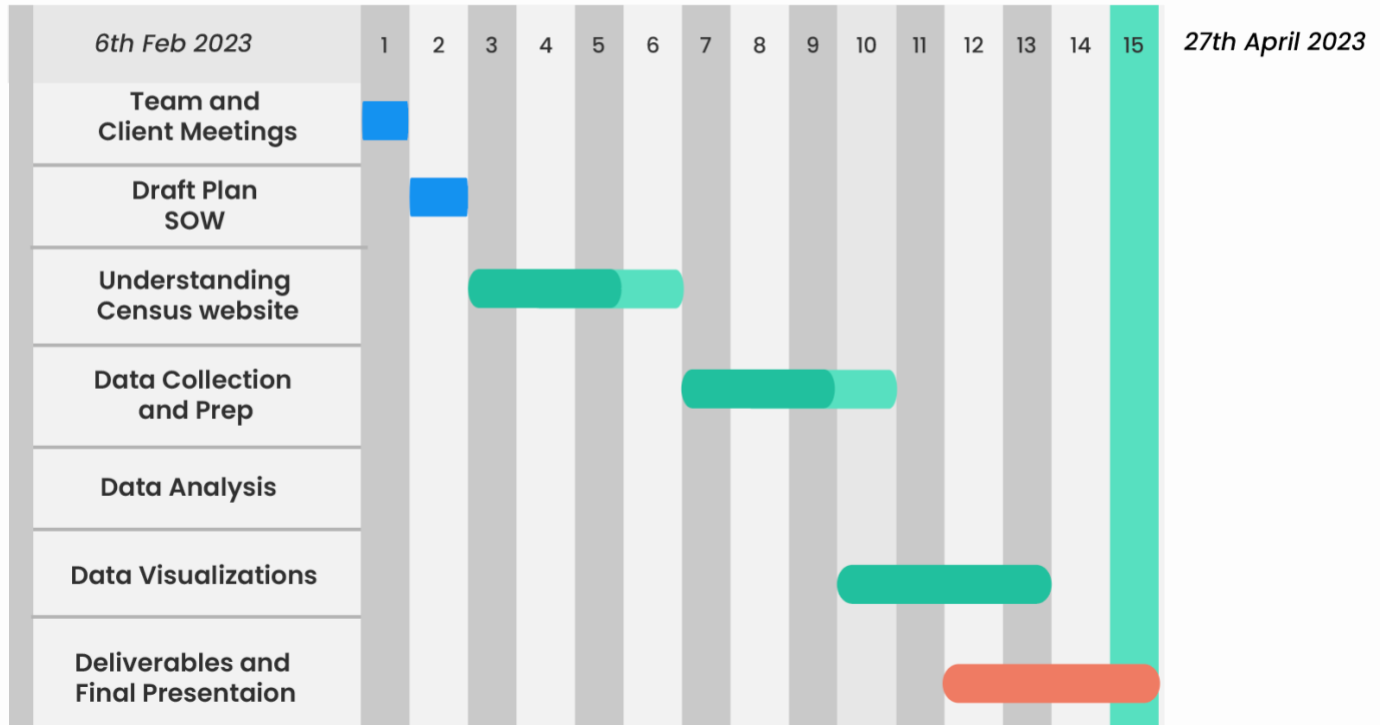
Finally, we reserved the remaining weeks for the engaging stages of Data Analysis, Data Visualization, and the preparation of our deliverables.

Final Gantt Chart:

UPDATED GANTT CHART

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Employment Disparities Among People with Disabilities from Diverse Ethnic Backgrounds



Upon commencing the project, we discovered that the client needed datasets, and we had limited knowledge about the Census website and the specific data required.

As a result, it took us nearly a month to familiarize ourselves with the Census website, causing a delay in the project's subsequent phases. By the end of week 6, our team had finally gained a solid understanding of the Census website. Unfortunately, without the necessary data, our progress was hindered.

After exploring the Census website, we found that data was available exclusively for population counts, lacking essential employment and income metrics.

Consequently, the time required for data collection and preparation for analysis increased. By week 10, we completed this stage.

We presented our findings to the client, who acknowledged the limitations preventing us from conducting data analyses like T-Tests or ANOVA to identify significant disparities.

At this point, the project's scope of work was revised to focus on identifying disparities among people with disabilities from diverse ethnic backgrounds. We have managed to stay on schedule for the remainder of the project, completing the dashboard development by week 13.

Solutions:

Our objective was to construct a narrative that highlighted the impact of disabilities on the lives of individuals from selected ancestries. To achieve this, we explored various count and percentage metrics using different variables and ultimately developed numerous comparative studies involving people with and without disabilities.

With the help of Micro Data, we generated the following reports at both the United States and Illinois levels:

- Demographics, Disability Prevalence, and Types of Disabilities
- Educational Attainment (Schooling, GED, Undergraduate, Graduate, and Doctoral Degrees)
- Employment Statistics
- Income-to-Poverty Ratios at Various Levels
- Social Security Income and Supplemental Security Income
- Types of Insurance
- Housing
- Transportation
- Citizenship Status
- Languages Spoken at Home

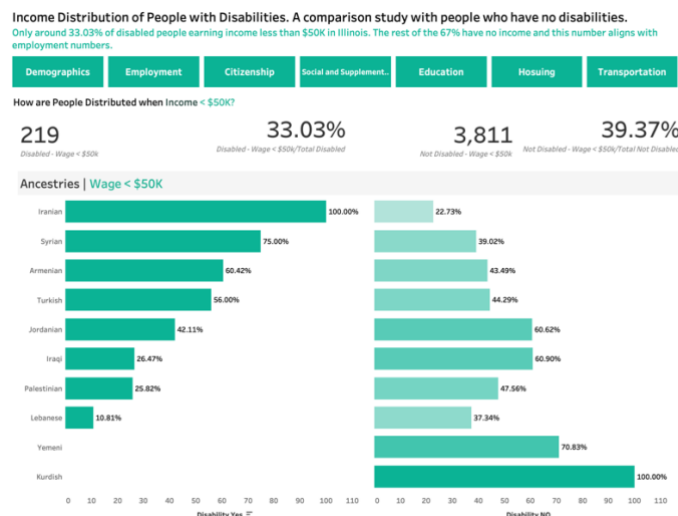
Sample Dashboard:

The dashboard is designed with a clear distinction: the left side focuses on individuals with disabilities, while the right-side features those without disabilities.

The bar charts compare the percentage of people within each ancestry at the specified level. In simple terms, the percentages for the bar chart are calculated as follows:

The Y-axis represents different ancestries, while the X-axis displays the proportion of people at a particular level, either with or without disabilities, depending on the left or right side of the chart.

To calculate the percentage for each bar, divide the number of people at that level (with or without disabilities) by the total number of people with disabilities (for the left side) or without disabilities (for the right side). Then, multiply the result by 100 to obtain the percentage value. This percentage reflects the proportion of each ancestry within the specified group (with or without disabilities).



Deliverables:

The deliverables for this project include:

1. Two BI reports featuring the variables mentioned above, consisting of 8 dashboards and various visualizations, tailored for Illinois and the United States.
2. A comprehensive Excel file created using data from the 2021 American Community Survey MicroData, available for both the United States and Illinois.
3. A detailed report outlining the findings and insights derived from the BI reports.

US BI Dashboards:

Demographics	Employment	Income	Social and Supplement..	Education	Housing	Transportation
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A	B	C	D	E
Data Variables	Description	Census Variable		
Ancestry Vs Transportation IL & US				
Ancestry	Ancestry Recode Second Entry	ANC2P		
Commuter Modes	Modes of Transportation used	JWTRNS		
Race Vs Ancestry IL & US				
Race	Recoded Race Code Third Entry	RAC3P		
Ancestry	Ancestry Recode Second Entry	ANC2P		
Language @IL & US				
Language Spoken at Home(LANP)	Language Spoken at Home	LANP		
Count @US	No. of People Speak this language at home	Count		
% Weight	% of People Speak this language at home	Count/Total Count		
US & IL DATA				
Ancestry	Ancestry Recode Second Entry	ANC2P		
Total Population	Total Sampled Population			
Males	No. of Males in the Sample			
Females	No. of Females in the Sample			
With a Disability(DIS_YES)	No. of People with Disability	DIS		
DIS_YES_Males	No. of Males with Disability			
DIS_YES_Females	No. of Females with Disability			
Without a Disability(DIS_NO)	No. of People without Disability	DIS		
DIS_NO_Males	No. of Males without Disability			
DIS_NO_Females	No. of Females without Disability			
Self-care Disability(DDRS_YES)	No. of People with Self-care Disability	DDRS		
DDRS_YES_Males	No. of Males with Self-care Disability			
DDRS_YES_Females	No. of Females with Self-care Disability			
Without Self-care Disability(DDRS_NO)	No. of People without Self-care Disability	DDRS		
DDRS_NO_Males	No. of Males without Self-care Disability			
DDRS_NO_Females	No. of Females without Self-care Disability			
Ambulatory Difficulty(DPHY_YES)	No. of People with Ambulatory Disability	DPHY		
DPHY_YES_Males	No. of Males with Ambulatory Disability			
DPHY_YES_Females	No. of Females with Ambulatory Disability			
Without Ambulatory Difficulty (DPHY_NO)	No. of People without Ambulatory Disability	DPHY		
DPHY_NO_Males	No. of Males without Ambulatory Disability			
DPHY_NO_Females	No. of Females without Ambulatory Disability			
Cognitive Difficulty(DREM_YES)	No. of People with Cognitive Disability	DREM		
DREM_YES_Males	No. of Males with Cognitive Disability			

◀ ▶	Data Variables	US DATA	Poverty Disability US	English Disability	SSP SSIP Disability US	WAGP D
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Conclusions:

In conclusion, our comprehensive analysis and data visualization of census data on disabled individuals from Middle Eastern ancestries have unveiled valuable insights and deepened our understanding of the challenges and needs faced by this community.

Using visualization tools like Tableau and Excel, we effectively identified patterns and trends and conveyed critical insights to our clients. The detailed reports, Tableau workbooks, and datasets we provided can be easily presented to relevant stakeholders, policymakers, and the general public.

Building on the foundation laid by the team from the previous semester, we were able to delve deeper into the data and conduct a thorough analysis, despite the limited information initially available. Our work serves as an excellent basis for any team seeking to advance this analysis in the future.