Juan Pablo García Gómez

Jp.garcia@student.ie.edu

H2-A Visa application

This document briefly describes the development of an Ad-Hoc dashboard developed with the H2- Visa application dataset

Business intelligence & datawarehousing

Individual Dashboard Design

# Background:

The government of the United States of America is planning to implement protectionist policies and strengthen the employment rates for low and mid income US citizens. To reach this long term goal, as part of their strategies, they are planning to allocate resources in training programs for agricultural tasks that are currently being performed by foreign temporary workers. To understand the Job characteristics and properly design the training programs, they have contacted the United States Citizenship and Immigration Services Bureau (USCIS), to analyze the information regarding the H-2A visa applications (H-2A: Temporary Agricultural Workers) in the last three years until June, 2017.

The USCIS is planning to develop a Dashboard for the United States Department of Labor, with the objective of clearly specifying relevant agricultural job characteristics that are being performed by foreigners. To clearly specify the job and worker characteristics, the Dashboard will be developed considering the 5Ws framework (Wikipedia, 2018) to describe **Who** is involved, **What** characteristics the job has, **Where** is the job being held, **When** regularly it happens, **Why/ How** is it happening. More specifically:

* **Size of the opportunity**: How many foreign workers per year occupy agricultural positions in the United States and how is the trend of foreign workers through time. These are the main indicators to understand how the labor market will be impacted.
* **What** type of job are foreigners performing? (e.g.: Main Jobs Titles, Payment characteristics, the working schedules, if they will supervise other employees, what primary crop do the personnel work with)
* **Where** is the job being held? Main States demanding agricultural jobs.
* **When** are the temporary jobs being held? Starting dates, Ending dates (duration of jobs).
* **Who** is carrying out the job? (e.g.: Job requirements such as Training, number of months training, required experience, number of workers required)

# Dashboard Loading Instructions:

To open the dashboard, refer to the file *H2A – Job Characteristics.twbx*. This file will open the Tableau workbook and the complete analysis is presented as a story in the tab *H2A – Job Characteristics.* To analyze the story you may see it in Presentation Mode .

The construction of the Graphs and Dashboards are also available. However, if you want to have access to the dataset, open the file *H2A Visas Dataset.sql* and in the Tableau the dataset tab will be available.

# Dashboard Characteristics:

Considering that the United States acts as a decentralized republic with autonomy among states, it’s important to detail and filter the information at a State level. The state level disaggregation is also important considering the size and environmental variety of the country.

The data is presented with the Story format of Tableau, composed of four different story points:

1. *Size of Opportunity:* This story point describes the size of the opportunity in terms of number of workers required per year, and the growth in the number of workers required. (Considering that we don’t have data for all the months of 2017, we present the data per trimester). We can see that for the last rolling year, around 225,000 foreign workers were required for agricultural labor. It’s also interesting to realize that the number of required workers is increasing in a double digit growth, showing important opportunities for US agricultural workers in the future. Regarding the resource allocation by states (*Where* for the 5Ws framework), we can see in the Pareto Chart that 80% of the workers are required in only 24% of the states (12 states), being the top five North Carolina, Washington, Georgia, California and Florida. In the filter *Year of Job Start* we can analyze the state importance and Pareto by year.
2. *Job Characteristics:* In this story point, we are able to understand per state the job characteristics (*What/Why* of the 5W’s framework). At the beginning we have selected the main 5 states. However, the Worksite States filter let us understand the Job characteristics for other states that we select. In this story point we clearly understand which is the Basic Unit of Pay per state (Monthly, Weekly, Hourly), the main crop demanded in the selected states, the Job duration per state selected (how many months are the workers performing their tasks) and the distribution of the number of hours per week in the selected states. These metrics are important to take in consideration while designing the job characteristics for US citizens.
3. *Worker Requirements:* To understand the profile of the workers (Who), this story point describes for each job title, how many years of experience and how much training is required to perform the tasks. These are crucial metrics for the training programs per job. In addition to these metrics, each point has information of the primary crop they will work with and if the job requires supervising other employees, and how many. This is important to understand if coaching programs are required in the trainings.
4. *Date Details*: The final story point is a detailed version of the months when the jobs start and end. This is important to define which are the months in with the potential labor force will be occupied. Considering that we are analyzing time series, line graphs are used to see the trend through time. Important start peaks in February and March and end peaks in August.

# Conclusions:

For Ad-Hoc consultations such as the utopic government plan of training local agricultural workers, the H2-A visa dataset gives relevant insights for decision making about training programs. It’s now possible to understand where the resources shall be allocated, the characteristics of the programs, when are the jobs going to be held, and what types of workers are required, among other variables. These Ad-Hoc consultations are possible thanks to the ETL process hell with the raw dataset of H2A visas applications.

# References

Wikipedia. (2018). *Five Ws*. Retrieved from https://en.wikipedia.org/wiki/Five\_Ws