

# Using Analytics to Identify Patterns in Client Services



Center for Analytics Research & Education  
High Country Workforce Development Board



# Presentation Overview

- Introduction of Team
- Initial Objectives
- Analytics Strategy
- Services Crosswalk
- Results and Implications
- Lessons Learned
- Future Opportunities and Next Steps

# Background

# The Partnership



High Country Workforce  
Development Board (HCWDB)

“...to **help employers** meet their workforce needs, help individuals **build careers**, **strengthen the local economy**, and meet the challenges of the global competition.”



The Center for Analytics Research  
& Education (CARE)

“...to use analytics to promote **positive behavioral change** in the world and use ‘**Analytics for Good**’.”

# Initial Objectives

# The Partnership



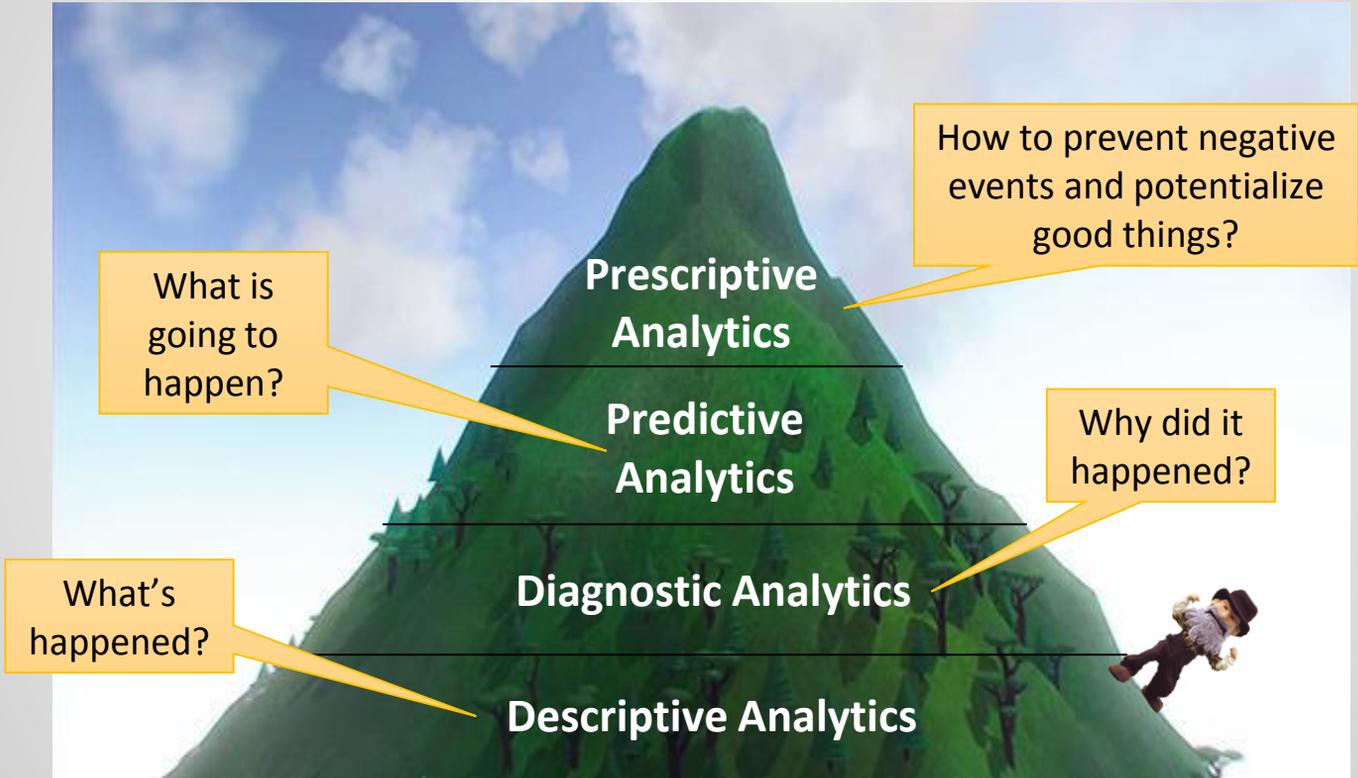
## HCWDB



## CARE

- HCWDB has a **rich data source**, but there is a **limited understanding** of what is in the data and how it can be utilized
- They would like to **use their data** to gain a **better understanding of who they serve**, and to **help them fulfill their mission**
- They would like to use data to **improve their performance** across all centers
- Working with HCWDB provides CARE with the opportunity to **fulfill their mission within the community**
- **Valuable learning opportunities** are provided for students involved in the center
- There is the potential for a **long-term, mutually beneficial relationship**

# Analytics Strategy for CARE





# The 8 Steps



- The Crosswalk was developed using the **NC Career Center Brochure**, and the services from **Final NC Works Service List**
- This Crosswalk allows for **connection between service data to specific steps** of the Workforce Services Process

# The Crosswalk

## Steps 1 & 2

### Step 1 – Create Your Profile

**1**  
Create Your Profile  
Enter your contact info and begin your profile on NCWorks Online.

• This is largely up to the individual. There few specific services identified that have been mapped with the step.

- WP: 003
- FNS: 667

### Step 2 – Meet A Counselor

**2**  
Meet A Counselor  
A specialist will help you get started with your job search.

• Orientation items are included in this step.

- WIA: 101, 103, 200, 201

## Steps 3 & 4

### Step 3 – Identify Your Skills

- WIA: 102, 203, 204, 412

- WP: 090, 102, 111, 130, 203, 204

- TAA: 102, 203, 204

- FNS: 668

### Step 4 – Plan Your Career

**4**  
Plan Your Career  
With our help you can begin to plan what career best fits you.

- WIA: 202, 205, 413, 417, 486, F06

- WP: 005, 089, 202, 205, 228, 247

- TAA: 205

- FNS: 669

## Steps 5 & 6

### Step 5 – Improve Your Skills

**5**  
Improve Your Skills  
Depending on your needs, we may be able to provide training to advance your skills.

- WIA: 104, 151, 214, 222, 300, 302, 304, 310, 324, 325, 328, 406, 410, 414, 415, 416, 418, 429, 430, F09, F10

- WP: 004, 104, 105, 207

### Step 6 – Prepare For Interviews

**6**  
Prepare For Interviews  
Finalize your resume, write a great cover letter, and learn what to expect.

• Several services overlap with this step.

- WIA:

- WP:

## Steps 7 & 8

### Step 7 – Meet With Employers

- WIA: 105, 125, 219, 301, 3, 400, 409, 411, 425, 6, F05

- P: E01, E02, E03, E04, 5, E06, E07, E08, E20, 2, E93, 123, 126, 133, 9, 246, 311, 500, 501, 2, 503, 504

- A: 237, 301

### Step 8 – Land A Job

**8**  
Land A Job  
Now it's up to you. With our help you will be prepared to find and land the job you desire.

• This step, like the first, is very much up to the individual.

- WIA: 131, 427, F03, F04, F07, F13, F14,

- WP: 270, 271

- EAI: 650

## Services Not Sorted

• The following services weren't categorized because the descriptions were vague, or so broad that no particular step captured the service provided. Several appear to be services that can be offered, or occur, throughout the Workforce Services Process.

- WIA: 180, 181, 184, 185, 217, 326, 419, 480, 481, 483, 484, 485, F01, F08, F11, F12, F15, F16, F17

- WP: 120, 124, 127, 191, 211, 238, 239, 240, 249, 263, 264, 265, 266, 267

- TAA: 217, 231, 232, 233, 234, 235, 236, 280

- EAI: 623, 624, 625, 626, 627, 629

- FNS: 672, 673, 697

- DVOP: V34

# Value: Potential KPI Analysis

## Analysis of:

### 1. Entered Employment

- Customer Demographics with the highest/lowest rates of employment post participation

### 2. Employment Retention

- Who is employed at a given quarter?
- Services received by customers with highest/lowest rates of retention
- Returning customers post- initial employment

### 3. Median earnings

- Services provided to customers at various earnings level
- Earnings levels by industry and county

### 4. Skill gain

- Translation of services into work performance

# Services by Office

# Overview of Data

**Number of participants → 15,932 (2014-2015)**

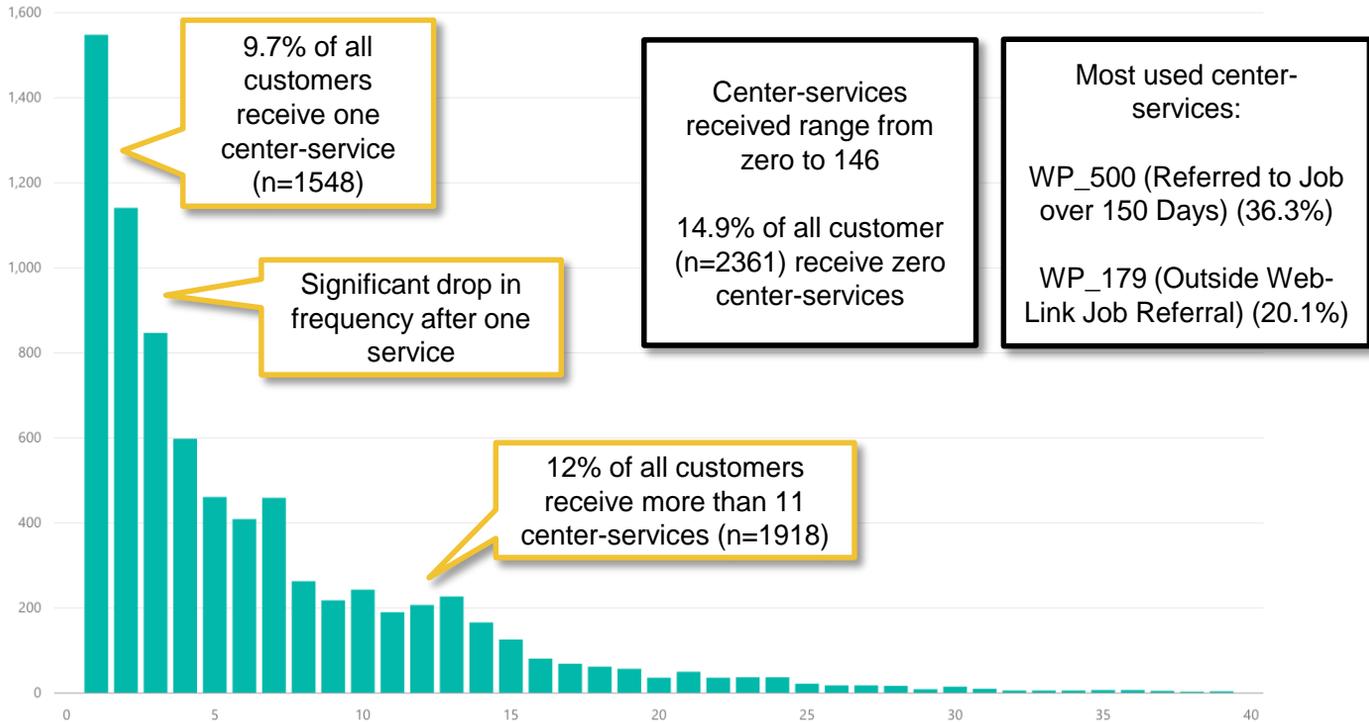
## **Key Variables**

Program Type, Crosswalk Step, Self-service, Center-service, Office



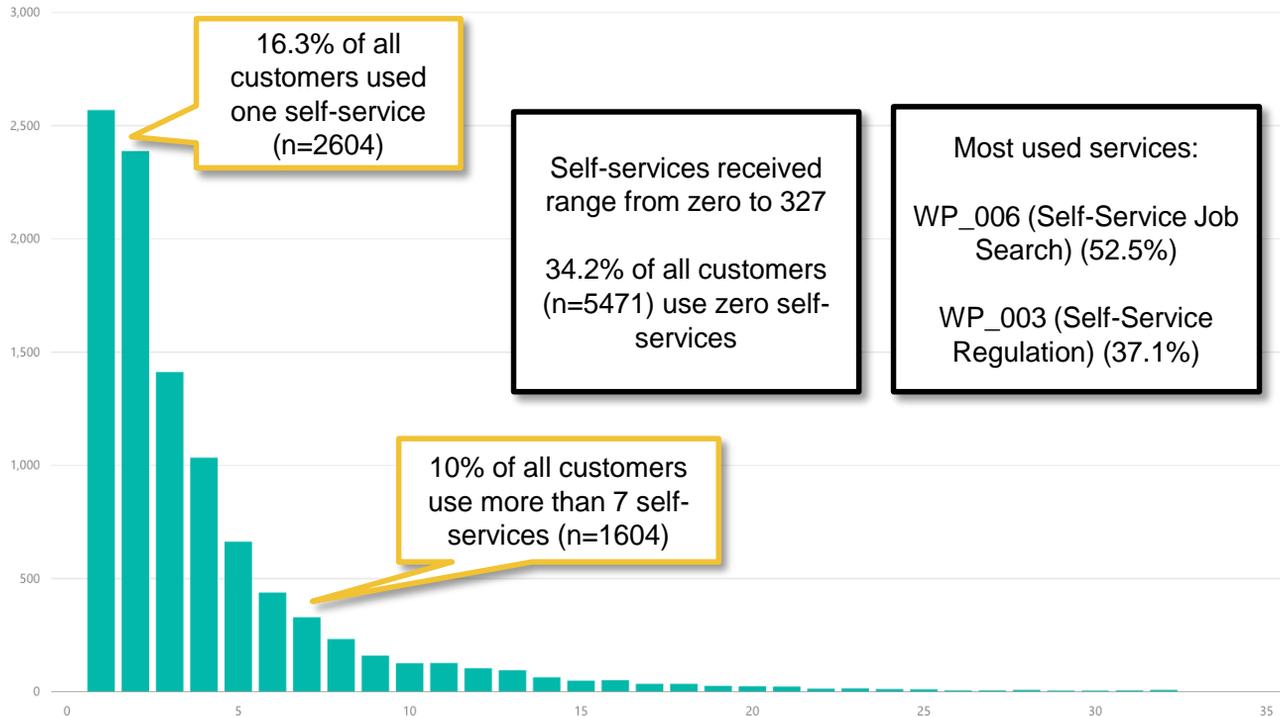
# Center-Service Customers (2014-2015)

- Customers receive an average 4.82 self-services (median: 2)



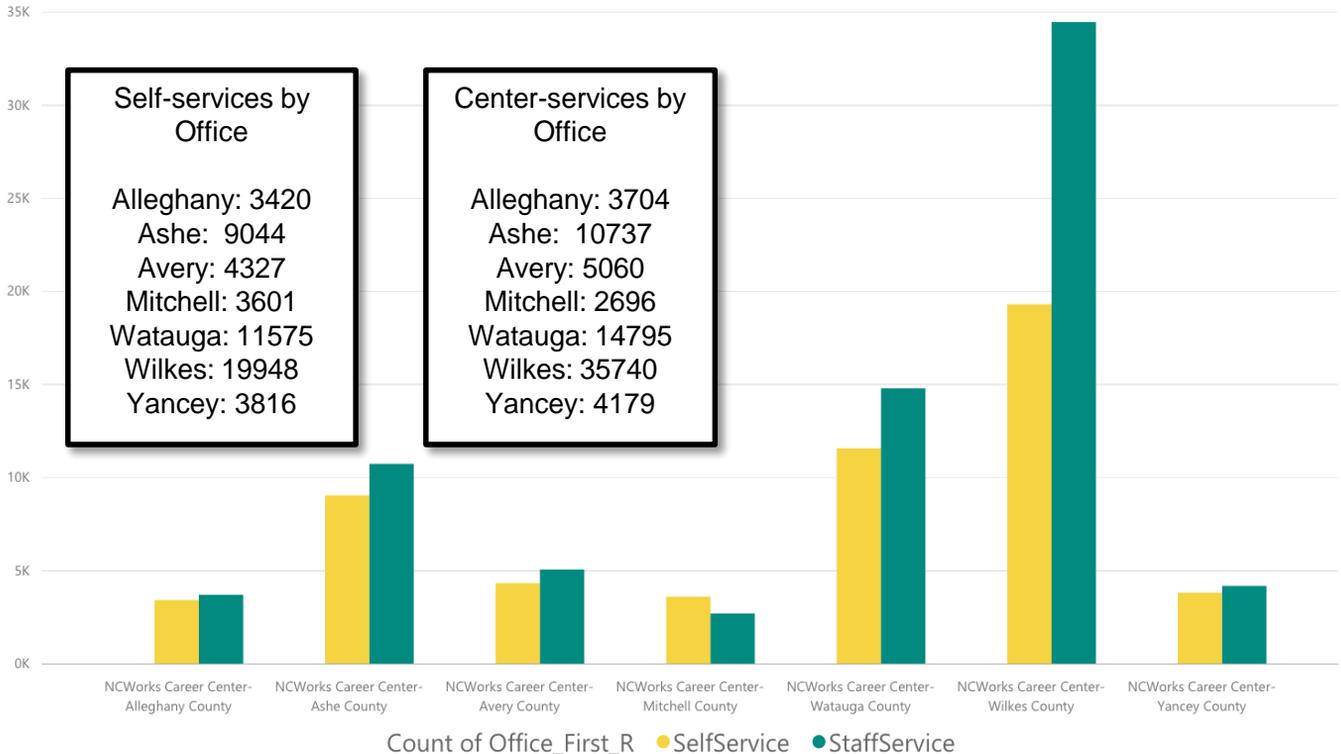
# Self-Service Customers (2014-2015)

- Customers receive an average 3.49 self-services (median: 2)



# Self-service vs. Center-service by Office

- Center-service > Self-service (except Mitchell)



# Step by Office

- 80.6% of step 5 services take place in Wilkes or Ashe



# Implications for HCWDB

- Gained value between center-services vs. self-services
  - Potential for variation between different types of services (visiting a center vs. using services at home)
- Drive toward prescriptive functions
- Better understanding of important step data
  - Every step of the process is important – are there steps in which we could be doing more?
- Future potential → looking at which services more often lead to employment



# Demographics by Office

# Overview of Data

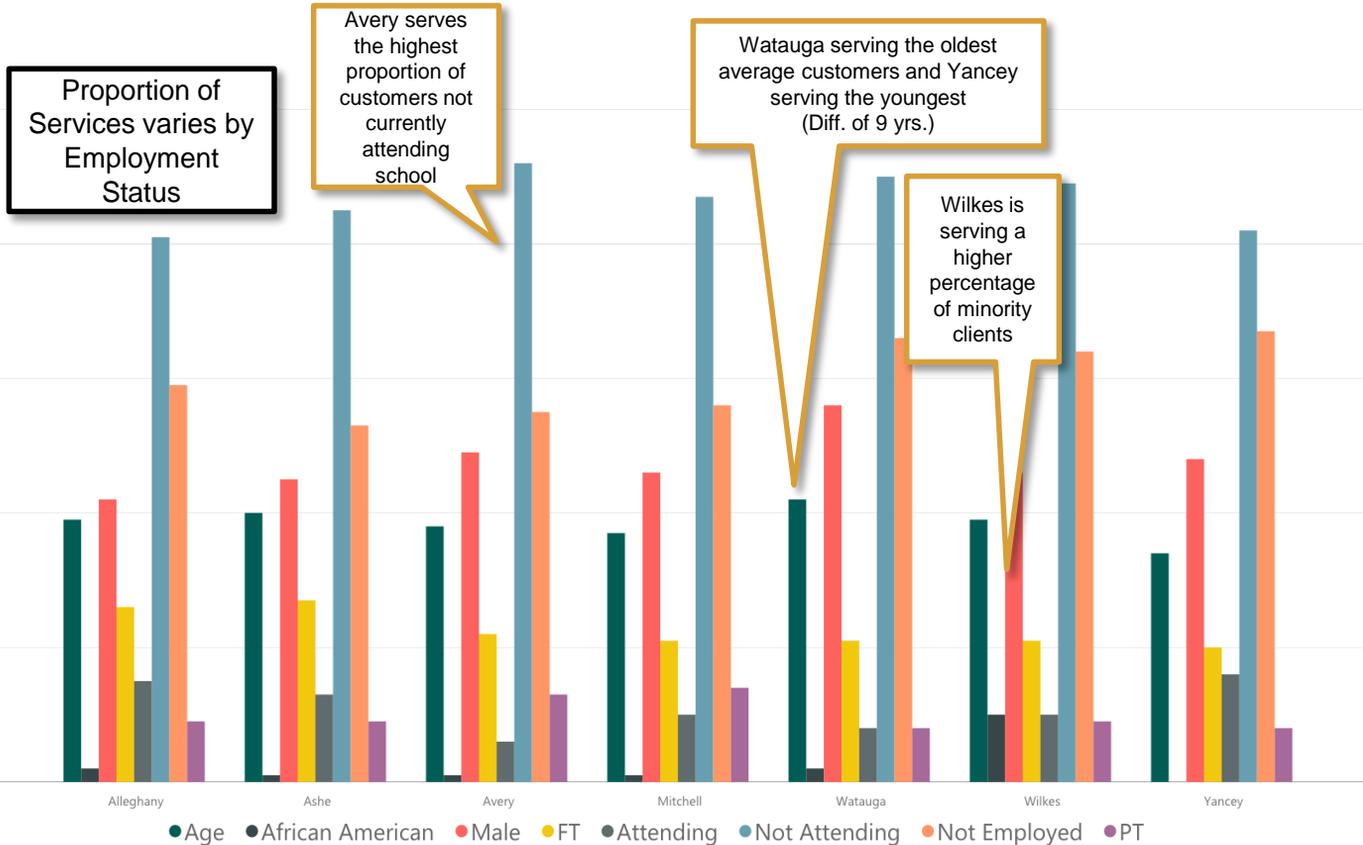
**Number of Participants → 3,815 (2014-2015)**

Far fewer participants have complete demographic information

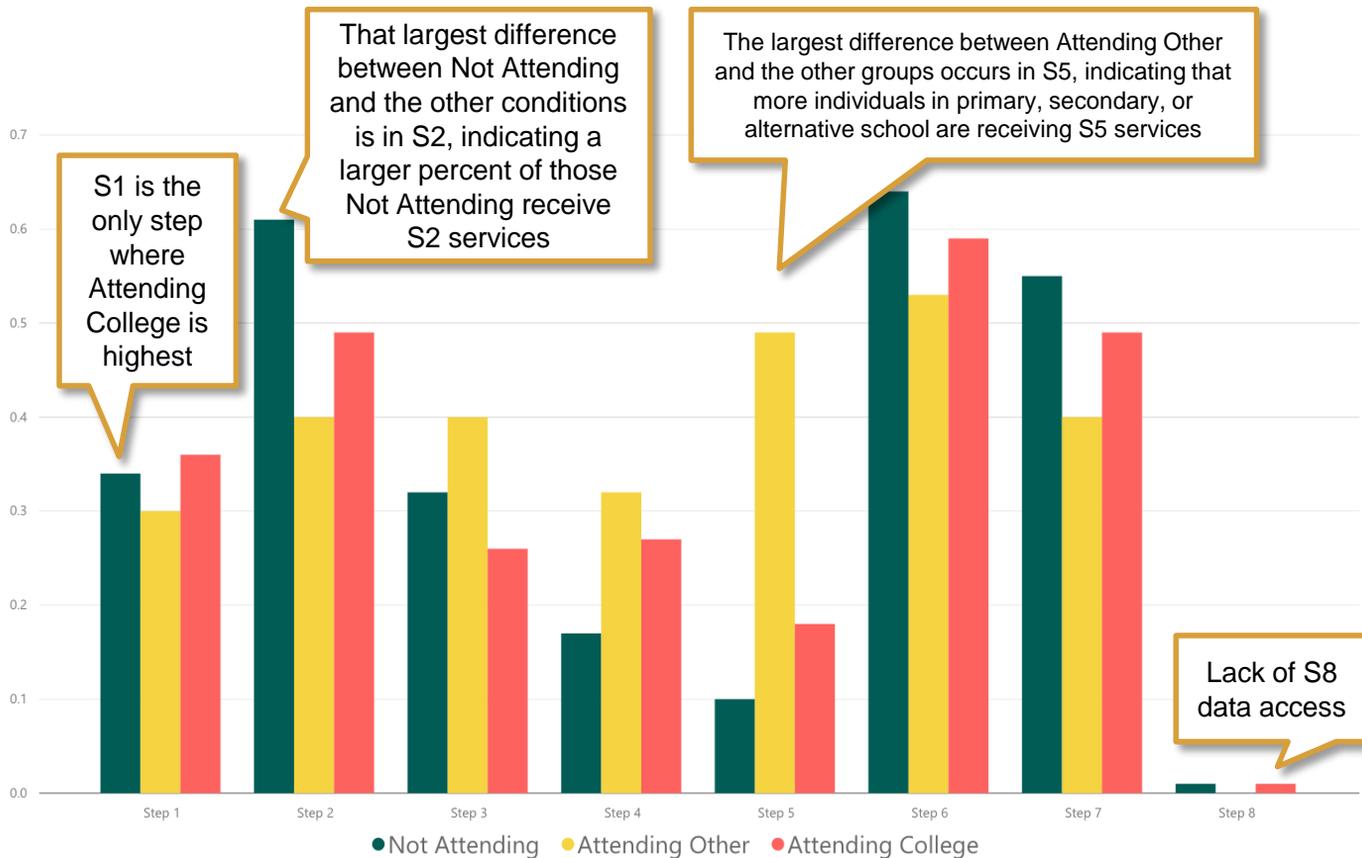
**Key Variables:**

Services, Program Type, Step, Office, Race, Age, Gender, Primary Language, Disabled, Education Status, Employment Status, Highest Level of Education Attained, etc.

# Demographics by Office

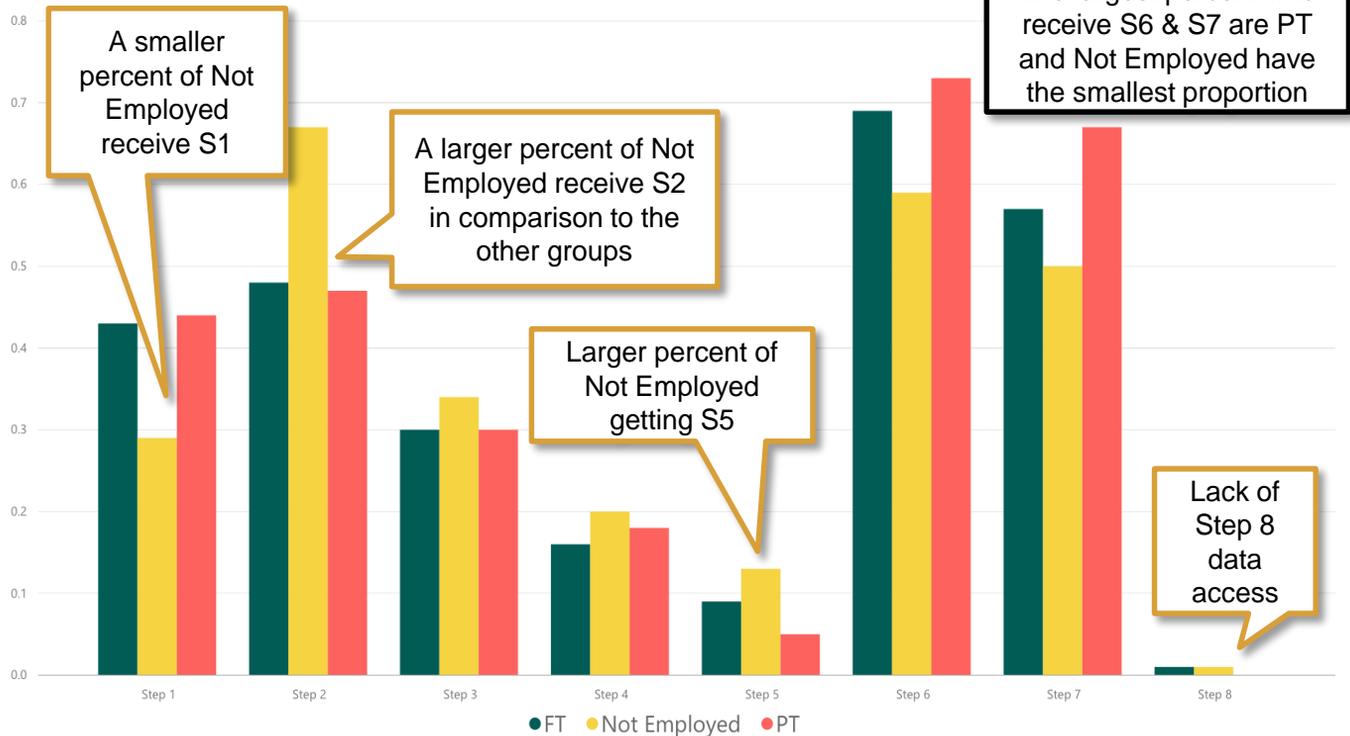


# Service Steps by Education Status



# Service Steps by Employment Status

- Notice relative spikes and troughs, particularly for those Not Employed
- FT and PT tended to have a similar pattern of results



# Implications for HCWDB

- Able to attain key information about the customers being served
- Value in looking at patterns in the data
  - Identifies key demographics to target services towards
- Future Potential → continued breakouts of demographic data by different offices
  - What demographics are using services that lead to positive employment outcomes?

# Lessons Learned

# Lessons Learned...

## SERVICES BY OFFICE

- Most customers received only one or two services, and center-services were most common.
- There was variability across the HCWDB Offices with regard to the average number of services customers received.
- Customers received Step 6 & 7 services more frequently, but this may be driven by the use of specific services.
- There were some interesting differences between offices with regard to the frequency of services they provided.



# Lessons Learned...

## DEMOGRAPHICS BY OFFICE

- There were demographic differences between customers who received services in the various HCWDB Offices.
- Customers with different demographic backgrounds receive different services.



# Next Steps

# Next Steps – Immediate

## Data Access:

- Long process to extract information using NCWorks reports
- Improve Access to Data: Custom Reports/Query, live information access, resume data, employment data

## Funding:

- Have used internal funds to subsidize efforts
- Will need external funding to continue to collect, clean, and analyze NCWorks system information

# Next Steps – Looking Ahead

## Medium-Term Projects:

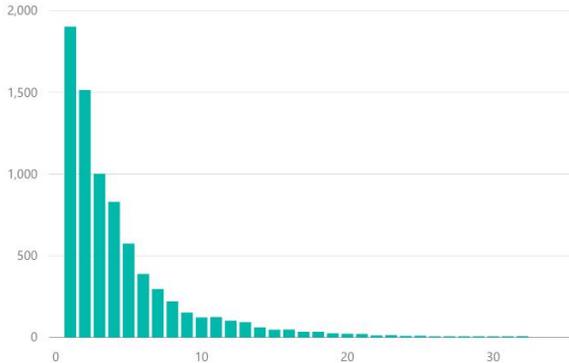
- Analysis of Resume Quality
- Demographic Profile by Service Steps
- Performance Analysis

## Long-Term Projects:

- Vocational Matching Tool
- Analysis of Counselor Comments
- Counselor/Customer Dashboard

# Dashboards

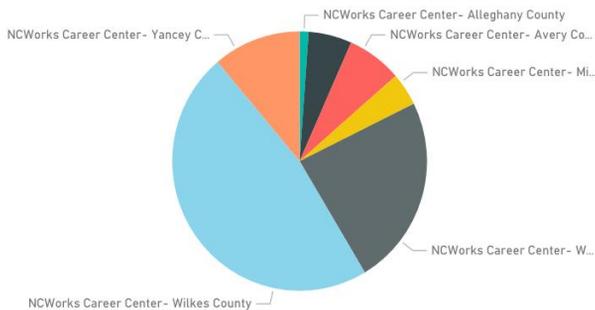
UserId by SelfService



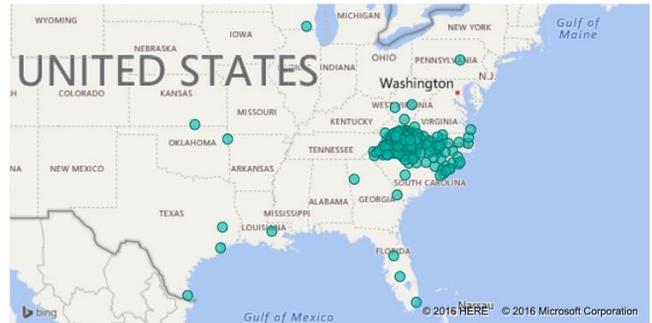
Count of Office\_First\_R, Step 1, Step 2, Step 3, Step 4, Step 5, Step 6, Step 7 and Step 8 by Office\_first\_1



Office\_First\_R by Office\_first\_1

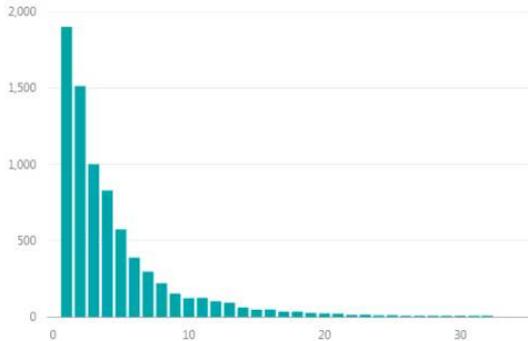


CityStateCountry\_first\_1



# Dashboards

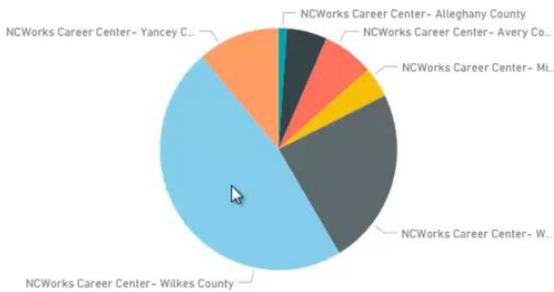
UserId by SelfService



Count of Office\_First\_R, Step 1, Step 2, Step 3, Step 4, Step 5, Step 6, Step 7 and Step 8 by Office\_first\_1



Office\_First\_R by Office\_first\_1



CityStateCountry\_first\_1



# Wrap Up

## Current Analyses:

- Office Demographic Analyses
- Self vs. Center Service Analyses
- Office by Crosswalk Step Analyses

## Next Steps:

- Demographic profiles by service steps
- Analysis of Resume Quality
- Counselor/Customer Dashboards
- Analysis of Customer Comments



## Value Moving Forward:

- Valuable real world data experience for students
- Better understanding of customer population and effective services for HCWDB

# Questions

# Contact Information

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