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MGMT 830
Final Project Data Methods and References
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Data Collection

This project builds upon a data analytics project I began in 2019.   As the Veteran Services Coordinator at K-State, I became familiar with the US Department of Veterans Affairs GI Bill Comparison Tool. I used that data set to build a training module for use with university staff. This project sought to find other federal data sets to explain the status of nontraditional students at K-State.

Federal Government Data is unwieldy. I was certainly not the first analyst to find this frustrating. Fortunately for me, the Urban Institute's Data@Urban team offered a set of tutorials and data references to comb through Department of Education Data.   I used these tools to understand nuances and identify potential attributes.   Despite the difficulty in handling, I chose to only use data from two sources within the Department.

National Center for Education Statistics (NCES) Data. The NCES has a massive repository of information online.   After a failed attempt at generating an enormous spreadsheet, I downloaded smaller, cohesive data sets. NCES bases attributes underscored age, veteran, military, disability and foreign student data. It also provided the percentage for my disability estimate.

Equity in Athletics Data Analysis (EADA) Data. EADA, also within the Department of Education, was much easier to customize.   I generated a cohesive data set on NCAA athletes across institutions. EADA based attributes underscored my NCAA athlete data.

GI Bill Comparison Tool Data. This Department of Veterans Affairs data proved useful in sorting and filtering for my initial project. I could not say the same about the NCES data. Fortunately, I generated my final dataset using the GI Bill Comparison Tool. Fortunately, the institution-level data included a universal key. More importantly, it allowed me to sort by institution type, degree level, and zip code.

Data Preparation

Joins. The diverse collection of datasets required me to use joins. With more time, I would have devoted more effort to customizing datasets. This would have made management of measures and dimensions much easier. Instead, I kept the original attribute titles within the dataset, and modified chart aliases for clarity.

Blends. As with joins, I used blends to combine diverse data sets, especially for internal K-State comparative data.

Filters. The dimensions within the VA dataset formed my primary filters. These included institution type, state, and highest degree awarded. I also used measurement-filtering from the NCES data set. Early on, I also built filters using dimension grouping techniques.

Calculated Fields. I rely heavily on calculated fields throughout the project. These include my disability estimate (undergraduates x 0.01 reported rate of disability), total NCAA athletes (total men + total women), and percentage calculations for age, veteran, and military data (subpopulation size / total undergraduates).

Data Visualization

Given the comparative nature of the data sets, I relied primarily on bar charts and maps.

Proportional Representation. I had hoped to include a tree diagram proportional representation, but this was beyond my skill level. That said, with my access to university KSIS datasets, I have experimented these tree diagrams. Unfortunately, I cannot share these charts. In its place, I used simple bar charts that captured a similar sense of scale.

Comparisons. Bar charts proved to be effective in showing how K-State and its nontrads stack up against others. With the exception of my blended chart, I attempted to keep colors consistent throughout.

Maps. Given my background in geospatial analysis, I have a strong bias toward maps. While the functionality of Tableau mapping does not rival the deep levels of analysis available within a GIS, I found it to be a decent visualization tool.

Presentation Design. I attempt to incorporate the general design concepts explained through Cole Nussbaumer Knaflic's *Storytelling with Data.* Specifically, I found myself gravitating toward overarching principles of simplicity and clarity.

Data References

US Department of Education. "Download Custom Data", EADA: Education in Athletics Data Analysis, https://ope.ed.gov/athletics/#/customdata/search, downloaded 28 April 2020.

US Department of Education. "Integrated Postsecondary Education System: Compare Institutions", National Center for Education Statistics(NCES), https://nces.ed.gov/ipeds, downloaded 28 April 2020.

US Department of Veterans Affairs. "GI Bill Comparison Tool", https://www.va.gov/gi-bill- comparison-tool/, downloaded 2 May 2020.

Project References

Data@Urban. "Why we built the Education Data Portal", Medium, https://medium.com/@urban_institute/why-we-built-the-education-data-portal-3cae85048b48, accessed 7 May 2020.

Data@Urban. "Using the Education Data Portal to tackle representation in economics", Medium, https://medium.com/@urban_institute/using-the-education-data-portal-to-tackle-representation-in-economics-3364bb210368, accessed 7 May 2020.

Kansas State University and Huron, "Strategic Enrollment Plan", https://www.k- state.edu/2025/initiatives/sem/docs/KSU-SEM-Public-Plan-August-2018-FINAL.pdf accessed 7 May 2020.

Knaflic, Cole Nussbaumer. Storytelling with Data: A Data Visualization Guide for Business Professionals Wiley (Kindle and Audible Editions), 2015.

Urban Institute. "Education Data Explorer: Colleges and Universities", https://educationdata.urban.org/data-explorer/colleges/, accessed 7 May 2020.

US Department of Education "College Navigator: Kansas State University", NCES, https://nces.ed.gov/collegenavigator/?q=Kansas+State+University&s=all&id=155399#accred, accessed 7 May 2020.

US Department of Education. "Definitions and Data: Who is a Nontraditional?", NCES, https://nces.ed.gov/pubs/web/97578e.asp, accessed 7 May 2020.

US Department of Education. "Fast Facts: Students with Disabilities", NCES, https://nces.ed.gov/fastfacts/display.asp?id=60 accessed 7 May 2020.

US Department of Education. "Percentage distribution of undergraduates, by military status, dependency status, Table 2-A.—and selected demographic characteristics: 2007–08", NCES, https://nces.ed.gov/pubs2009/2009182.pdf#page=4, accessed 7 May 2020.