Seeing is Recruiting: Visualizing Income Factors for Targeted Enrollment

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***Abstract*-These instructions give you basic guidelines for preparing camera-ready papers for conference proceedings.**

1. Goals and Business Objectives

This paper’s main goal is to showcase different data visualizations techniques that are used to find factors to determine if someone’s income is above or below $50,000. These factors are found through U.S. Census data and include information Age, Occupation and Gender just to name few. The meeting of this goal will help XYZ Corporation develop its marketing profiles which can be sold to companies or for this application schools like UVW College to bolster their enrollment. This application will be able to showcase some of these major factors so they can find future students. If done correctly this can be scaled and used across all campuses to help any college meant and or exceed their enrollment goals.

1. Assumptions
2. The data is correct.
3. The data was collected in an unbiased manner.

Since we are given the data from the United States Census Bureau, we are not sure if all or any of the data is correct or if it was collected in a matter that would not bias the results. If it comes out the data is incorrect or was collected incorrectly then the graphs could vastly be different with complete opposite observations. This could be tested with a smaller sample size to see if they get results that compare roughly the same to the results that are represented in this paper.

1. User Stories
2. *As a member of the UVW Marketing Team, I want to know what occupations make more or less than $50,000 so that I can effectively advertise to possible students that want to switch careers and make more money.*

For user story one I chose to create two different donut graphs, to show what occupation makes up what portion of the job market for incomes equal to or less than $50,000 and over $50,000. I did this because a member of the UVW Marketing Team needs to know what occupations can make more or less than $50,000. Using a donut chart, you can see that “Exec-Managerial” jobs can make above and below the target income, but it makes up a much larger portion of jobs over $50,000.

With this information the marketing team can advertise to occupations like “Handlers-cleaners” who want to make more money, because very few of them make over $50,000. This could cause enrollment to increase if UVW college offers business like classes or certifications that would help transition them to a new career allowing them a higher chance to make more then $50,000.

I created this by first combing “Armed-Forces” and “Priv-house-serv” in to the “Other-Service”. I did this because they took up less than 1%, which leads to the data being hard to read. For incomes above and below the target price I add the occupations to a dictionary as the key and the number of times that occupations shows up as its value in the dictionary. I then use the Keys as the label of the graph and the values as the data that makes up the percentage.

1. *As a manager of the UVM Financial Aid Team, I want to know what factors affect possible students outside the US so that I know what type of students might be offered scholarships or grants to come to UVM.*

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1. *As a head of the UVM Career Success Center, I want to know how a person’s capital gain could affect their income over their lifetime so I can talk with potential students at different points in their life about coming to our college.*

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1. *As a member of the UVW Marketing Team, I want to know if working for a education level can affect your capital loss based on your income level so that we know what type of Jobs and Education we should target our advertisements too.*

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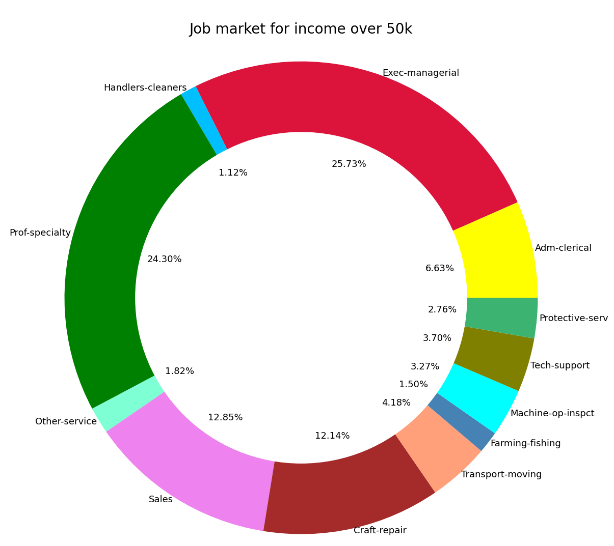
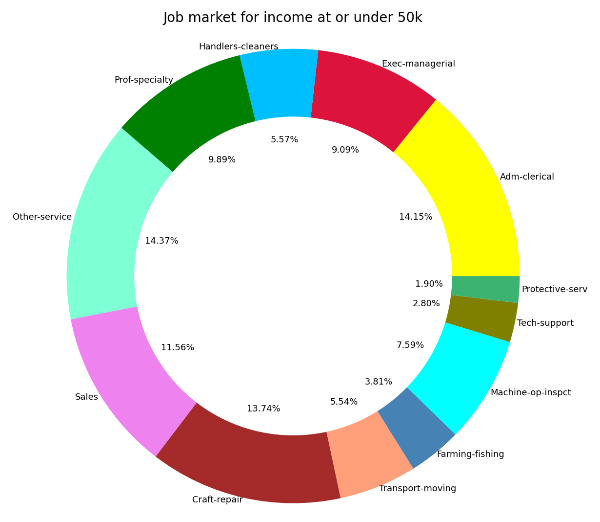
1. *As a member of the UVW Marketing Team, I want to know how hours worked per week are affected by their income so I can accurately advertise to potential students.*

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1. Visualizations



*Figure 1. donut graphs for User Story 1.*

A graph with orange and blue lines

Description automatically generated

*Figure 2. Line graph for User Story 2.*

*A screenshot of a graph

Description automatically generated*

*Figure 3. Mosaic Plot for User Story 3.*

*A graph of a graph with numbers and points

Description automatically generated with medium confidence*

*Figure 4. Scatter Plot for User Story 4.*

*A white paper with black lines

Description automatically generated*

*Figure 4. Box Plots for User Story 5.*

1. Questions
2. *Figures and Tables*

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Figure axis labels are often a source of confusion. Use words rather than symbols. For example, write “Magnetization,” or “Magnetization, M,” not just “M.” Put units in parentheses. Do not label axes only with units. In the example, write “Magnetization

1. Not Doing
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References

1. G. Eason, B. Noble, and I.N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529-551, April 1955.
2. J. Clerk Maxwell, *A Treatise on Electricity and Magnetism,* 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68-73.
3. I.S. Jacobs and C.P. Bean, “Fine particles, thin films and exchange anisotropy,” in *Magnetism,* vol. III, G.T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271-350.
4. K. Elissa, “Title of paper if known,” unpublished.
5. R. Nicole, “Title of paper with only first word capitalized,” *J. Name Stand. Abbrev.,* in press.
6. Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” *IEEE Transl. J. Magn. Japan*, vol. 2, pp. 740-741, August 1987 [*Digests 9th Annual Conf. Magnetics Japan,* p. 301, 1982].
7. M. Young, *The Technical Writer’s Handbook.* Mill Valley, CA: University Science, 1989.