

2023 MOBTS – Activity/Exercise

Visualizing Drivers of Job Satisfaction using Tableau

Job satisfaction involves the positive feelings and evaluations individuals have about their employment. Organizations that improve the job satisfaction of their employees may experience higher employee commitment and retention. Conversely, job dissatisfaction contributes to low morale and turnover. Several factors influence job satisfaction, such as adequacy of pay, the employee's relationship with the supervisor, and the nature of the work. This experiential learning activity uses Tableau to visualize these factors in a company with three departments. Using Tableau Public, a free platform, session participants learn how to use analytics as a pedagogical strategy to help their students (1) understand the drivers of job satisfaction and (2) make HR recommendations.

Keywords: Analytics, Tableau, Job Satisfaction

- Duration: 60 minutes in length.
- Applicable classroom style: either face-to-face or online
- Course level for the activity: either undergraduate or graduate.

1. Introduction

This activity uses analytics as a pedagogical strategy for helping students learn about job satisfaction and how to make HR recommendations. It also demonstrates how Tableau can become a versatile experiential learning tool. Certainly, analytics is a skill that students will use in their careers. This activity targets undergraduate and graduate students because they can see how analytics is used to aid HR decisions. No previous experience in Tableau is required. This activity is flexible enough to be used in face-to-face or online instruction.

2. Theoretical Foundation/Teaching Implications

2.1 Making a case for the use of Tableau in management teaching

The concern about the lack of opportunities for students to acquire hands-on skills is not new (Leavitt, 1989, p. 40). Glen et al. (2014, p. 655) noted that “business schools have been criticized for their overemphasis on lecture and case method at the expense of clinical training or learning by doing.” Case methods and lectures are still important teaching strategies and using Tableau in the classroom allows professors to blend traditional and alternative teaching approaches.

Tableau is one of the most popular visualization tools in the market (Sherman, 2020). Incorporating Tableau into teaching can provide students with valuable skills as there is a shortage of professionals with some analytics knowledge. The U.S. Bureau of Labor Statistics reports that the demand for data science skills will drive a 27.9 percent rise in employment in the field by 2026 (Goasduff, 2020).

2.2 Job Satisfaction: Brief summary

According to Valentine et al. (2020), job satisfaction involves the positive feelings and evaluations individuals have about their employment. Organizations that improve the job satisfaction of their employees may experience higher employee commitment and retention. Conversely, job dissatisfaction contributes to low morale and turnover. Several factors influence job satisfaction, such as adequacy of pay, the employee’s relationship with the supervisor, and the nature of the work. This session contributes to effective teaching and learning the concept of job satisfaction and how to make data-based recommendations.

3. Learning Objectives, Engagement, & Takeaway

The *learning objectives* are as follows:

1. Define job satisfaction and articulate its importance
2. Identify three drivers of job satisfaction
3. Create visualizations using HR data
4. Interpret the data to support a recommendation about improving job satisfaction

Engagement: The PDW facilitators will lead a hands-on demonstration of Tableau Public (free web-based platform) while participants follow the instructions to create visualizations using their laptops.

Takeaway: The main takeaway is that participants in this session will see how easily they can integrate Tableau into their teaching. They will also see that Tableau provides visualizations that help students improve their analytical skills.

4. Exercise Overview

This exercise teaches step by step how students can use an analytics tool (Tableau) to create visualizations to get meaning from data. Students will download an Excel file from a web-location to be provided during the session. This file contains employee-level job satisfaction scores and data on three drivers of job satisfaction, namely, (a) employee's salary, (b) number of vacation days, and (3) quality of relationship with their direct supervisor (Likert scale). High scores on this factor represent high-quality relationships between the employee and their supervisor.

Using Tableau, students create individual bar charts for each factor averaged by department to identify departments with lowest and highest job satisfaction scores. Next they compare these charts with the charts on the three selected drivers of job satisfaction. The main goal is to help students make sense of large amounts of data using Tableau visualizations. After analyzing the visualizations, they can identify areas for improvements and make recommendations to address these areas. The step-by-step fashion of this exercise helps with the student's learning process, as students fully complete each step and analyze graphs before moving to the next step.

5. Session Description

1. Welcome (5 minutes)

We welcome the participants to the session. Depending on the number of participants, we may ask them to introduce themselves.

2. Job Satisfaction (5 minutes)

We briefly define job satisfaction and describe its drivers.

3. Getting started with Tableau: Installation (5 minutes) and Overview (5 minutes)

Participants download the Excel data for the exercise, sign on Tableau Public online, and upload the Excel file. These instructions will be provided during the session.

4. Class Activity – Visualizing drivers of job satisfaction (30 minutes)

First, we walk the participants through the steps to create bar charts. Next, the participants create the charts. Finally, participants interpret the charts and make HR recommendations.

5. Debrief (10 minutes)

CLASS ACTIVITY: VISUALIZING DRIVERS OF JOB SATISFACTION EXERCISE INSTRUCTIONS

The Case:

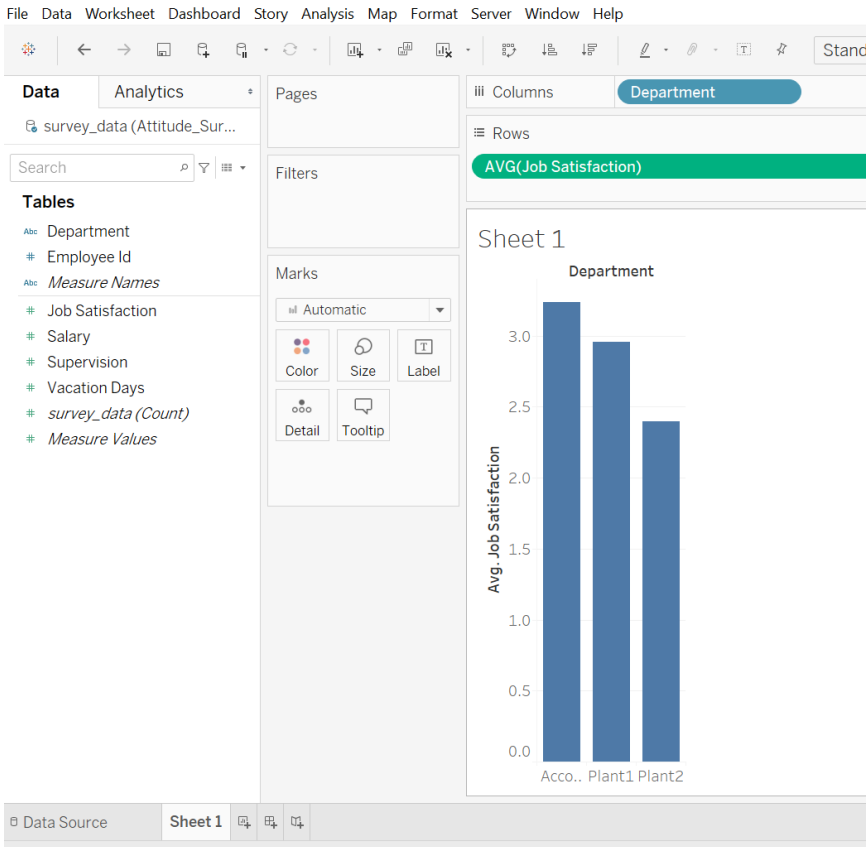
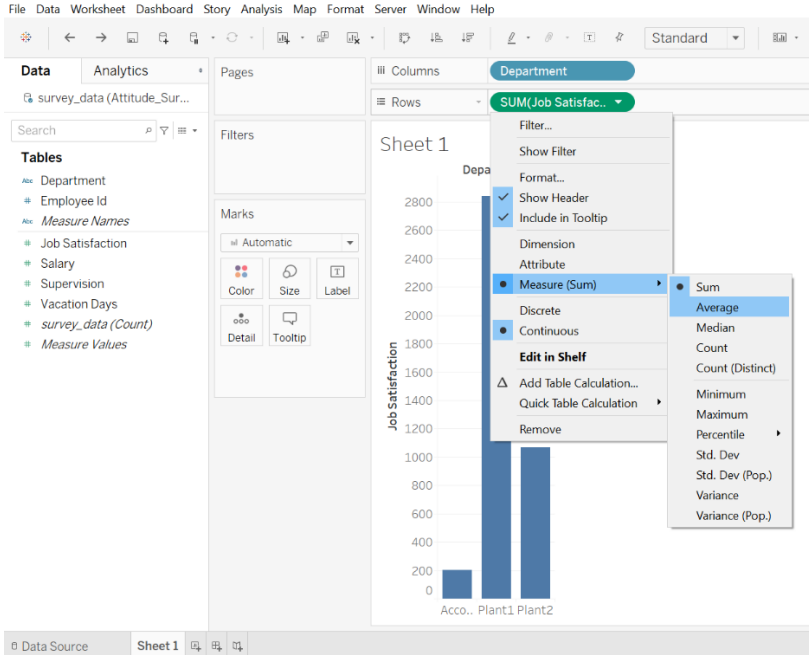
Lightsome Technologies is a large manufacturing company with two plants. You work as an HR liaison and have been hearing complaints from employees from three departments (Accounting, Plant 1, and Plant 2) about their overall feelings about their jobs. You brought this issue to your HR Director's attention, and he tasked you to conduct an Attitude Survey, which is a survey that "focuses on employees' feelings and beliefs about their jobs and the organization" (Valentine et al. 2020, p. 159). After conducting the survey in those three departments, you focused your analysis on the job satisfaction score and three drivers of job satisfaction: (a) salary, (b) number of vacation days taken, and (c) quality of relationship with supervisor. Your preliminary goal is to identify patterns in the data. At a later time, you may conduct further statistical analysis such as t-tests, correlations, and regressions.

Questions for Students:

1. What data does the survey provide? How is this survey called? Why is this survey important?

ANSWER: This survey is important as it contains data about job satisfaction and factors that may impact job satisfaction by department. This is an Attitude Survey.

2. Using Tableau, create a bar chart showing the AVERAGE employee job satisfaction score by department.
 - Drag "Department" and drop into "Columns";
 - Drag "Job Satisfaction" and drop into "Rows";
 - Change the Measure from "Sum" to "Average".



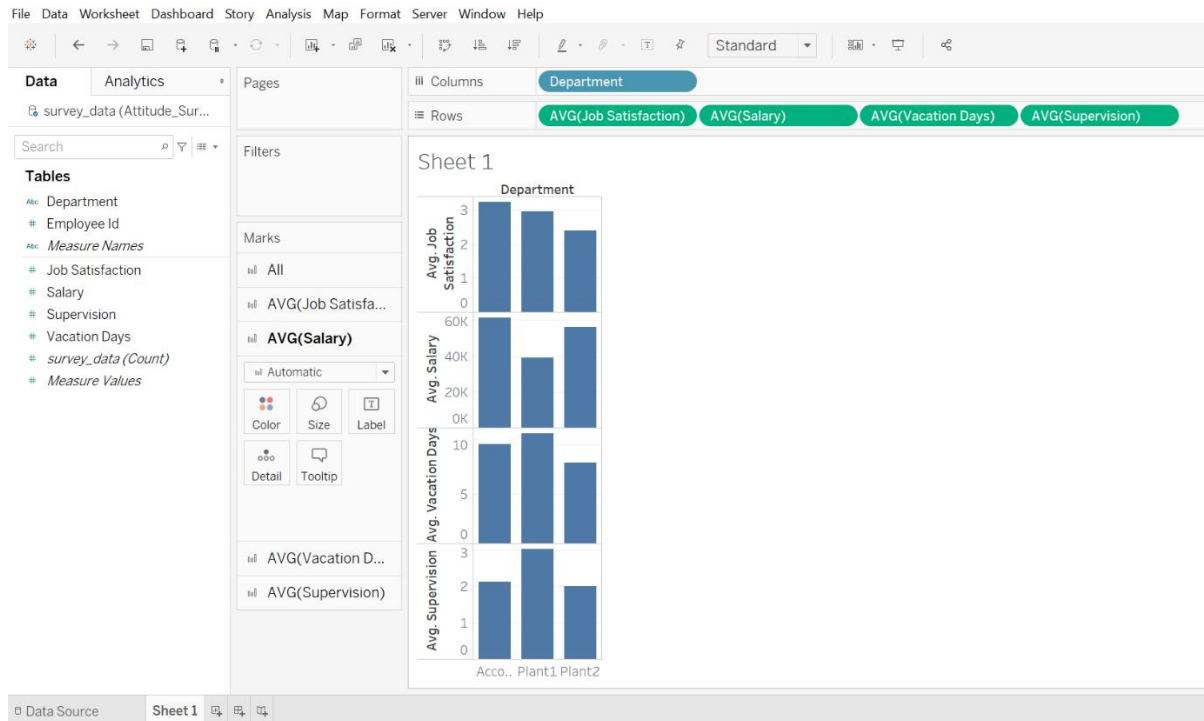
- Which department has the lowest average employee satisfaction score?

ANSWER: Plant 2 has the lowest level of job satisfaction.

- Which department has the highest average employee satisfaction score?

ANSWER: Accounting has the highest level of job satisfaction.

- Using Tableau, create a bar chart for the other three variables, averaged by department (Follow the same steps as described in Question #2).



- Analyze the graphs for these three drivers of job satisfaction. What is the pattern for the department with the lowest score?

Plant 2 has a low score for the average Employee-Supervision relationship and a low average number of vacation days. Although the average salary in Plant 1 is higher than that of Plant 2, the average job satisfaction in Plant 2 is lower than the average job satisfaction for Plant 1 or Accounting Dept.

- What is your recommendation to your HR director?

It is important to find out why Plant 2 employees are not having as many vacation days as the employees in Plant 1 and Accounting. Because the average quality of relationship with supervisors is low in Plant 2, the HR Director should find out whether the Plant2 supervisors need leadership training to improve mutual understanding.

Debriefing/Class Discussion Questions:

1. Discuss what you have learned from this experience with the person next to you.
2. Why do you think the average job satisfaction in the Accounting Dept. is high, although the average quality of relationship with the supervisor is low?
3. Why do you think the average job satisfaction in Plant is higher than the average in Plant , although the average salary is low?
4. What seems to be combined effects of these three drivers?

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