Competencies

In this project, you will demonstrate your mastery of the following competencies:

* Apply descriptive analysis methods to address a business problem
* Interpret historical data to support areas for improvement
* Present visual solutions that provide value to end users and decision makers

Scenario

You are working as a business analyst for XYZ, a regional restaurant chain. Recently, your organization was acquired by ABC, another restaurant chain. The joint leadership team of the newly formed business needs to create a profitable three-year plan. They will look to your analysis to inform this plan, given that neither company has any analysis of its own. You will be the first analyst to look at the data of the newly formed business.

Both restaurant chains operate out of multiple locations, sell direct to consumers, and are fast-casual restaurants. However, they offer distinct products that cater to different customer bases. You need to provide a descriptive analysis of what the new joint customer base looks like and how that compares in terms of the demographics of the geographic regions they are now selling in, now that they are a single entity with locations in different geographical regions than their home base.

Your final product will be a suite of visualizations that explain to the joint leadership team the current state of this newly formed business, the customer profiles of the new organization, and the products that have historically sold best and worst and are the most and least profitable. Finally, you have been asked to compare the customer profiles to the regional demographics where the newly formed restaurant chain has locations. Using your analysis, the joint leadership team will craft a three-year plan to make the company profitable within the fast-casual industry segment, which is notorious for being competitive.

Directions

**Part One: Transforming Data and Identifying Trends**Using Power BI, clean and transform the data sets from XYZ and ABC to create a single data set that includes the aggregated data from both organizations to prepare it for analysis. You will then analyze the data to identify and explain patterns and trends and any additional findings.

1. **Using the XYZ and ABC customer data sets in the Supporting Materials section, identify errors and gaps in the data.**
   1. Which attributes do the data sets share?
   2. Identify whether or not data is either missing or incomplete. Explain how this impacts the integrity of the data.
   3. Which strategies did you employ to identify the errors and gaps in the data? Explain your reasoning.
2. **Clean and transform the data.**
   1. Create new variables out of existing ones as needed so that you can address the joint leadership team’s questions and concerns. Explain any relationships or trends identified through your analysis.
      1. Analyze spending trends
         1. By month and season
         2. By gender
         3. By region
         4. By customers with and without children
      2. Analyze the best and worst selling products
         1. By region
         2. By month and season
         3. By gender
         4. By customers with and without children
      3. Analyze the profitability of products
         1. By region
         2. By month and season
         3. By gender
         4. By customers with and without children
3. **Create various visualizations for each variable.**
   1. Identify each variable in the data.
   2. For each variable, create appropriate visualizations and explain how they support the narrative.
      1. Analyze the shape of the visualizations.
      2. Is the data grouped in any particular way, or is it randomly scattered? Explain.
      3. Are there any outliers? If so, what might they indicate?
   3. Identify and explain the patterns and trends in the customer base.
      1. What states have the highest and lowest profit margins?
      2. Which restaurant category has the highest and the lowest average check?
      3. Is there any pattern in average checks by time of day (AM or PM)?
         1. What about by month of the year?
   4. Produce summary statistics for each variable.
      1. Include the following:
         1. Central tendency
         2. Measures of dispersion
         3. Shape of the data’s distribution
         4. Is there a large amount of missing data? If so, how does this impact your analysis? Explain.

**Part Two: Analysis and Recommendations Presentation**Use the cleaned and transformed data set to present visual solutions to the various stakeholders. Include any previously created visualizations to support the narrative.

1. **Current State Analysis (Slides 1–4)**
   1. Address the following for both XYZ and ABC restaurant chains, as well as the merged company.
      1. What are its most/least popular items?
      2. What are the most and least profitable items?
      3. Who are the top and bottom customers, in terms of profit?
2. **Findings From Analysis (Slides 5–8)**
   1. Demographic and purchasing profiles of the customer segments
      1. How do the customer demographics compare to the population demographics of the area in which the restaurant chains are located?
3. **Implications and Recommendations (Slides 9–15)**
   1. Explain the status of the stakeholder requirements.
      1. Did you have the data you needed? Explain how that impacted your analysis.
      2. Explain the relevance and potential limitations of the data underlying your visualizations.
   2. Recommend areas for improvement for various stakeholders based on your analysis.
      1. Explain shortcomings in the data that may impact your recommendation.
      2. Are there business processes that need to be altered to obtain the correct data?
      3. How does your analysis impact optimal resource allocation for each stakeholder group in the next three years?
         1. Sales
         2. Marketing
         3. Information technology
         4. Finance

What to Submit

To complete this project, you must submit the following:

**Part One: Transforming Data and Identifying Trends**This should be a 3- to 5-page report, including Power BI screenshots. This should be a Word document with double spacing, 12-point Times New Roman font, and one-inch margins. Sources should be cited according to APA style.

**Part Two: Analysis and Recommendations Presentation**This should be a 15-slide PowerPoint presentation, including Power BI screenshots. Sources should be cited according to APA style.