A review of the ACSI data

In our initial proposal, we described an intent to use the ACSI dataset to perform a parallel analysis of customer satisfaction. After investigating the dataset and reviewing some of the related papers, we no longer think this is a practical approach.

In our primary dataset, variables are narrowly targeted and closely related to the airline industry. Variables such as “Baggage Handling” and “Leg Room” are two such examples. Because the ACSI data crosses multiple industries, the questions serve a more general purpose. For example, it includes a variable assessing whether the customer’s expectations were met by asking, “Considering all of your expectations, to what extent has the company/brand fallen short of or exceeded your expectations?”. Although the question is valid, it is difficult to derive a one-to-one mapping of the factors which drive customer satisfaction.

Additionally, the analysis of the dataset uses partial least squares structural equation modeling (PLS-SEM) for its analysis. The method uses the included variables to derive several latent variables, which it then uses as a tool for analysis. Each latent variable combines underlying factors constructed using methods comparable to PCA. Although we find their work interesting, a robust understanding of their techniques is beyond the scope of this course.

A diagram of customer satisfaction

Description automatically generatedGiven these challenges, we are exploring alternative methods of using the data. One option is using the ACSI data to determine the financial value of a satisfied customer. The ACSI data relates the latent variable of customer satisfaction to the latent variable of loyalty with a coefficient of 0.677. This analysis comes with its own challenges, however. The two different datasets use different methodologies and different scales. Our primary source of information treats customer satisfaction as a binary variable (satisfied/other than satisfied). The ACSI dataset uses a numeric index. In the ACSI data, a 1-point increase in satisfaction leads to a 0.677-point increase in loyalty, but it is not entirely clear how that would translate back to the primary data source.