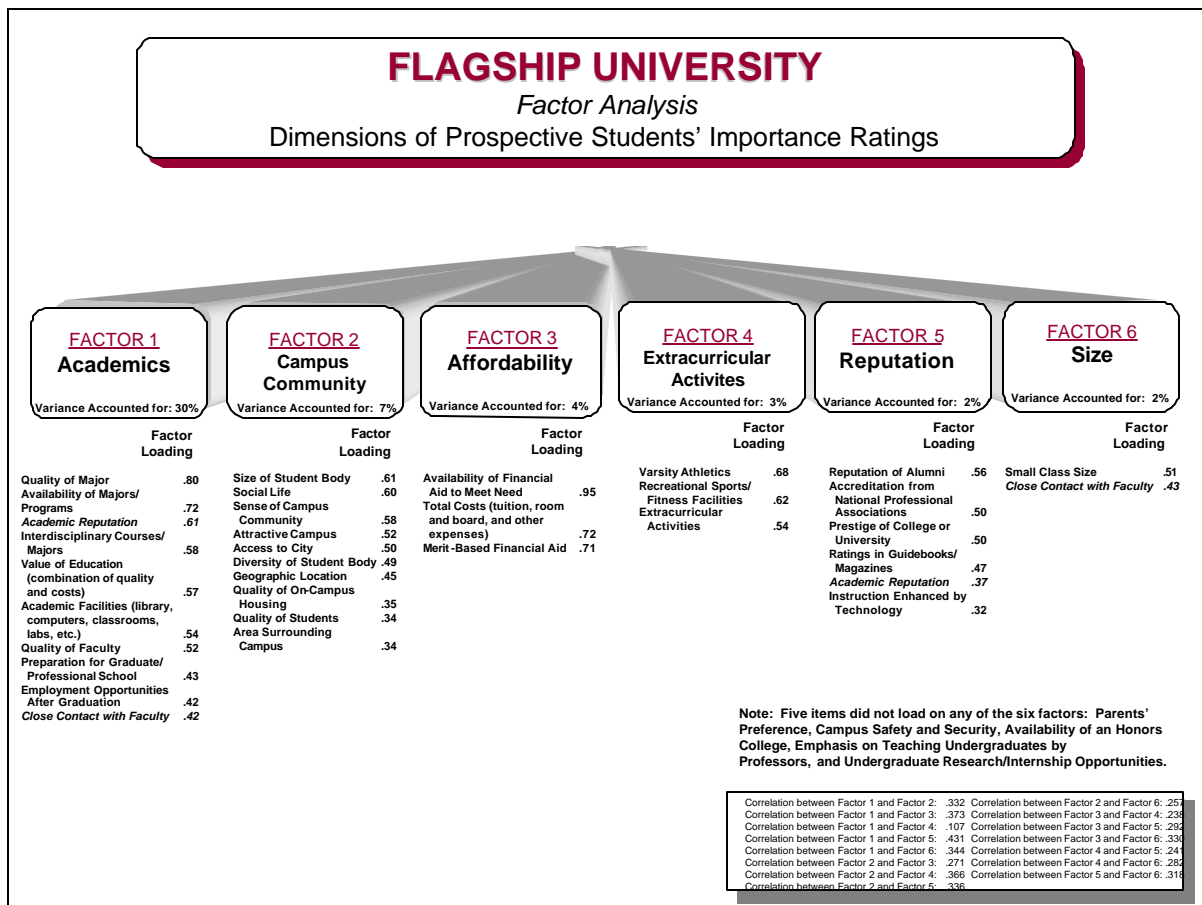


## Factor analysis

Factor analysis is a multivariate statistical tool that allows researchers to:

- Recognize relationships among a large group of variables;
- Reduce large sets of variables to a structured and interpretable form that reveals underlying dimensions of the data; and
- Produce factors that can be used as variables for further analysis.

As the number of variables to be considered in an analysis increases, there is a corresponding need to examine the underlying patterns or relationships and determine whether the information can be condensed or summarized into a smaller set of components or factors. Factor analysis is a multivariate statistical method that enables us to study the underlying structure of a data set, helping us to better understand the values, priorities and perceptions of important constituent groups. We often utilize factor analysis to determine the major components of an institution's image and to highlight the priorities of an institution's current and prospective students.



## Applying Factor Analysis

Factor analysis reveals groupings that are useful in the development of marketing themes. The figure above shows the results of factor analysis undertaken to identify relationships among prospective-student ratings of the importance of 37 college characteristics. Their importance ratings were found to be interrelated in such a way that six priority themes were revealed: academics, campus community, affordability, extracurricular activities, reputation, and size. These underlying dimensions can be used to describe the data in a much smaller number of concepts than the original variables. For Flagship University, these themes were used as a framework for new institutional messaging.

Examination of which variables group together to form a factor or theme can often add more insight. For instance, close inspection of the *academics* theme reveals that Flagship University's prospective students strongly tie the value of an education together with academic variables (such as the quality of majors, availability of majors/programs, and academic reputation) rather than with financial variables (such as financial aid and total costs). This linkage of value to academics rather than costs was an important consideration in the development of the University's messaging system.