The Use of Factor Analysis and Multiple Regression in Evaluating MIS Program Relevancy: A Work-In-Progress Presentation

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ABSTRACT

This presentation will describe a work-in-progress that addresses the knowledge versus skills paradox in MIS outcomes assessments. The database is comprised of alumni assessments of the value of the content of each required course in an MIS program using two frames of reference - in one's first year on the job and in one's current position. The intent of the study is to develop course content value factors using a principal components factor analysis, then to relate the resulting factors to an overall index of satisfaction for the entire MIS program. The study will illustrate the application of factor analysis in revealing clusters of courses that relate to knowledge and clusters of courses that relate to skills.

Keywords: crriculum assessment, program relevancy, skills vs. knowledge, alumni satisfaction index

1. Course Content Factor Identification

The first null hypothesis is that there is only one factor that describes the content of all required courses in the MIS program being analyzed. The alternative hypothesis is that there are multiple factors that describe the content of all required courses in the MIS program being analyzed. Further, it is hypothesized that the factors that are found will contain courses, whose contents are inter-correlated, that will provide insight into whether the content of each group of inter-correlated courses appears to be skills-related, concept-related or a blend of these. If this occurs, faculty will have a methodology whereby they can come to grips with key knowledge versus skill issues.

2. Program Satisfaction Index

The next step was to present the alumni with a group of bi-polar adjectives and ask them to consider how descriptive each adjective is, using a six-point Likert scale, of their impression of the entire MIS program. The null hypothesis is that no factor will be found that the entire group of alumni agree upon as indicative of their satisfaction with the MIS program. The alternative hypothesis is that a factor will be found that is an index of satisfaction with the entire MIS program.

3. Content Factors Related to Program Satisfaction

If multiple factors of inter-correlated course contents were identified and a satisfaction index with the entire MIS program is found, the study will move to the next stage. The third portion of the study will test the null hypothesis that there is no correlation between the satisfaction index score and the factors that emerge when course content inter-correlations were tested for. The alternative hypothesis is that it will be found that certain course content factors and more highly correlated with the satisfaction index score for students than other course content factors. This directly investigates the issue of which course content clusters, skills courses, knowledge/concepts courses, or courses containing a blend of the two are those that MIS alumni find most valuable in the work world, i.e., are 'drivers' of alumni satisfaction with an MIS program's content when the program's content is put to the test of on the job value.

The presentation will then conceptually describe and discuss the results of utilizing multiple regression analysis to determine whether course content value factors explain program satisfaction and, if so, the relative power of knowledge versus skills factors in explaining the variance in graduates' satisfaction with the entire MIS program.

The subjects in this study were asked to judge the value of the content of each required course within two frames of reference, one's first year on the job and in one's current position. As a consequence, the researchers are able to compare and contrast the results of performing the above statistical analyses for both frames of reference. By developing the analysis in two ways, one can determine if course content value factors are at variance in the time-dependent format that was created exclusively for this study, as well as their explanatory efficacy in accounting for MIS program satisfaction.

4. Implications of Study Findings

The presentation's intent will be to discuss preliminary findings, conclusions, and recommendations concerning enhancements that can be made to student satisfaction with an MIS option. It will also pay particular attention to explaining the application of multivariate research techniques (i.e., factor analysis and multiple regression) to outcomes assessment. Finally, it will reveal insights into the relative power of MIS knowledge versus MIS skills in explaining program satisfaction.