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A Quantitative Analysis of MIS Faculty Compensation

Thomas Tribunella
Rochester Institute of Technology

M. Pamela Neely
Rochester Institute of Technology

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Linking Theory and Practice Using the Service Transaction Analysis Method in a Real-World Service Operations Project
Refereed Research Paper

John K. Visich (Bryant College), Angela M. Wicks (Bryant College)

We describe a new method to link theory and practice using a real-world, two part, group service project for Operations Management courses. In Part 1, students determine the mission statement, competitive priorities and antecedents of customer satisfaction for the fast food industry. In Part 2, students conduct a field study of a fast food restaurant selected by the instructor. The service transaction analysis technique introduced by Johnston (1999) is used to evaluate the service process.

IE-3   Curricula and Evaluation
Saturday, Nov. 20, 10:00-11:30 am   New Hampshire, 5th Floor

Session Facilitators: Kenneth E. Callow (Bay Path College)

Business Curriculum: One Way Small Colleges Can Compete With Larger Schools
Award Competition Entry

Kenneth E. Callow (Bay Path College), Arlene Eisenman (Bay Path College)

The combination of a bachelor's and master's degree in an innovative way to eliminate course and major redundancies and increase Graduate student enrollment by retaining existing undergraduate students

A Modular Tool for Modeling Business Curriculum
Refereed Research Paper

Christine P. Andrews (Florida Gulf Coast University), Judy Wynekoop (Florida Gulf Coast University)

There has been debate over the types of IS knowledge and skills all business majors should possess. This paper develops a model to help allocate specific IS learning objects to different IS or major courses with an undergraduate business curriculum.

Using Multiattribute Utility Theory to Incorporate Student Preferences Into Classroom Performance Assessment: The Case of Introductory Accounting Students
Refereed Research Paper

Inshik Seol (Clark University), Joseph Sarkis (Clark University)

Previous research has shown that participative approaches lead students to greater motivation, effort, and better performance. This paper discusses how to improve students' motivation level by using multi-attribute utility theory. Educators can benefit in at least two ways: (1) instructors can set some boundaries in designing the classroom performance assessment system, and (2) instructors can develop a better combination of different evaluation factors.

Determinants of Student Evaluation of Teaching in a Newly Accredited College of Business
Refereed Research Paper

Masood Badri (United Arab Emirates University)

The author analyzed 3,185 student-faculty evaluations from a newly accredited business program at the United Arab Emirates University (UAEU) to investigate the effect of many factors on the SET. Using MANOVA and ANOVA, findings support previous research of the existence of potential biasing factors. Results indicate that expected grade, actual grade, course level, class size, course timing, student gender, and course subject affect the SET significantly.

IS-5   Model Testing in IS Research
Saturday, Nov. 20, 10:00-11:30 am   Wellesley, 3rd Floor

Session Facilitators: Prashant Palvia (University of North Carolina - Greensboro)

Improving the Performance of Branch and Bound Clustering Algorithm
Research Abstract

Chun Hung Cheng (Chinese University of Hong Kong)

The original cluster identification approach is the optimal approach to cluster a 0-1 matrix that is perfectly separable. However, it cannot decompose partially separable matrices. Previous efforts made use of a branch and bound framework to help cluster identification algorithm decompose these partially separable matrices. Although the branch and bound scheme is effective, these existing algorithms may still produce undesirable clustering solutions. We discuss limitations of prior models.

Testing an Extended Model of IT Acceptance in the Chinese Culture
Refereed Research Paper

En Mao (University of Wisconsin-Milwaukee), Prashant Palvia (University of North Carolina - Greensboro)

With globalization, it is important to understand IT adoption in other cultures. To enrich the understanding of IT acceptance, we extended a U.S.-based research model to a different culture, China. Data collected via a cross-sectional survey of e-mail users in 30 Chinese organizations was used to validate the model.

Extreme Programming (XP) Practices Under Review: The Case for Test Driven Development
Refereed Research Paper

Thomas Cohn (Managed Health Care Associates), Ravi Paul (East Carolina University)

Extreme Programming (XP) is an agile software development methodology that was created to deal with rapidly changing requirements. This article reports on the results of a study in progress to evaluate and validate the effectiveness of a core XP principle called Test Driven Development (TDD). We also present a set of test development best practices gleaned from this project.

Partial Least Squares Validation of a Formative Structural Equation Model of Information Quality
Research Abstract

Matthew W. Bovee (University of Vermont)

Using partial least squares analysis and survey data from health care provider claims processing this research validates a formative model of information quality that addresses theoretical and conceptual problems with prior models. Results support the model for both information consumers and suppliers, and suggest well-accepted constructs are context or domain-specific.

IS-6   IS Education and Academia Issues
Saturday, Nov. 20, 10:00-11:30 am   Suffolk, 3rd Floor

Session Facilitators: Jon Blue (Virginia Commonwealth University)

A Quantitative Analysis of MIS Faculty Compensation
Refereed Research Paper

Thomas J. Tribunella (Rochester Institute of Technology), Pam M. Neely (Rochester Institute of Technology)

This study examines data collected from the Association for Information Systems 2003 and 2004 MIS Salary Surveys. The relationship between compensation and its possible determinants such as faculty research

A QUANTITATIVE ANALYSIS OF MIS FACULTY COMPENSATION

Thomas Tribunella, ttribunella@cob.rit.edu, 585.475.5511
M. Pamela Neely, pneely@cob.rit.edu, 585.475.4570
Rochester Institute of Technology, College of Business, Rochester, NY 14623-5608

ABSTRACT

This study examines data collected from the Association for Information Systems 2003 and 2004 MIS Salary Surveys. The relationships between compensation and its possible determinants such as faculty research productivity and school teaching load are analyzed. We find that compensation is significantly correlated with faculty profiles as well as school profiles.

Keywords: Management Information Systems, Compensation

INTRODUCTION

This study examines compensation, rank and publication data collected from individuals who completed the 2003-2004 and 2004-2005 MIS salary surveys at the Association for Information Systems (AIS) Web site [1]. The relationships among rank, compensation and research productivity gleaned from this data could supply valuable insight during promotion, tenure and compensation decisions. In addition, information related to institutional attributes such as accreditation, location and teaching load are also included in the analysis. The results of this study could benefit administrators as well as professors that teach and research in the area of MIS.

LITERATURE REVIEW AND CONTRIBUTIONS OF THIS STUDY

Research related to the determinants of MIS faculty salaries is lacking. However, outside the field of MIS, a number of articles address the area of faculty compensation and productivity. Determinants of faculty salaries [3] and rank [7] as well as the value of journal articles published [12] and citations [5] have been the subject of analysis. For example, Swidler and Goldreuer [10] reported that a professor's first published article in a top finance journal has a net present value between $19,493 and $33,754. In another example, Diamond [5] concluded that the marginal compensation value of a citation ranges between $50 and $1,300. Delorme, Hill, and Wood [4] took this line of research one step further by conducting a study to analyze quantitative methods of determining faculty salaries. In addition, the earnings and promotion of female faculty has been studied [6].

Much research has been published related to compensation in major academic fields such as finance [10], accounting information systems [11] and economics [13], [9]. Factors which are difficult to control such as congeniality, teaching quality, service to the institution, and journal quality will enter the promotion and compensation process and complicate the analysis [12]. However, some studies have included teaching performance in their analysis [8], [14]. It is unclear whether the factors discussed in these articles are relevant for predicting salaries for

newly minted PhD's or for those individuals who are changing academic institutions. Tuckman and Leahey [12] reported that publications provide diminishing returns and this may explain why many senior faculty members experience a reduction in their research productivity. Furthermore, knowledge of an individual's past publication record is an unreliable predictor of future productivity [15].

Even though much research has been published related to compensation in some academic fields, little attention has been given to the area of MIS. Conspicuously absent from the literature are in-depth studies of MIS faculty compensation and its relationship to determinants such as research productivity and university attributes. Since this is the first study of the determinants of MIS professor compensation it will help administrators, such as department chairs and deans, allocate scarce resources to faculty. It will aid decision processes related to evaluating MIS faculty member salaries by reporting market based determinants. In addition, it may supply information to faculty to help them prioritize their time and manage their careers. Finally, the results may make a contribution to finding a compensation model that is generalizable to other academic fields.

METHODS

The survey was designed and is maintained by Dennis Galletta at the University of Pennsylvania for the Association for Information Systems (AIS). Participants could submit data anonymously or non-anonymously at the AIS Web site. The survey was accompanied by a privacy statement which stated that participant identities will not be revealed. Non-anonymous data was encouraged because some administrators will discount the validity of anonymous data. The respondents were asked to provide compensation information, experience, publications and faculty rank. Respondents were also asked to supply school and demographic information. In this study, compensation is measured in terms of cash salary. Accordingly, employee benefits, taxes, union contracts, grants, consulting, extra service, and other variables were not included in the compensation amount.

The sample represents the results of the 2003-2004 and 2004-2005 salary surveys at the Association for Information Systems Web site [1]. This survey was administered online and only new faculty members or faculty members who changed jobs in the 2003-2005 academic years participated in the study. The respondents self selected to participate in the survey. Therefore, a possible weakness of this study is self selection bias. Those who chose to participate in the survey may not be representative of the population which we wish to make inferences. In addition, the respondents may have given false or misleading information. To mitigate this problem we compared the survey average salary with the average salary reported by the AACSB (Association to Advance Collegiate Schools of Business) [2]. In addition, the reliability of the AIS data is increased since 45% of the respondents revealed their identities.

RESULTS, DESCRIPTIVE STATISTICS AND REGRESSION MODELS

We collected data from 65 faculty members who had participated in the survey. The respondents represented the diversity of the population in many respects. Descriptive statistics of schools and respondents are displayed below in Table 1.

TABLE 1
University Profiles and Respondent Profiles

Accreditation Status:	Percent	Journal Publications:	Percent
Not Nationally or Internationally Accredited	5%	0 publications	13%
Nationally or Internationally Accredited	95%	1 publication	25%
Total	100%	2 publications	13%
		3 publications	12%
Type of College:	Percent	4 publications	11%
Private College	35%	5 or more publications	26%
Public College	65%	Total	100%
Total	100%		
		Full Time Teaching:	Percent
College Location:	Percent	0 to 1 year	37%
USA	94%	2 to 3 years	22%
Non-USA	6%	4 to 5 years	14%
Total	100%	6 to 7 years	11%
		8 or more years	16%
School's Highest Degree:	Percent	Total	100%
Associate	2%		
Bachelor	6%	Highest Degree Earned:	Percent
Master	48%	Unspecified	3%
Doctorate	44%	Bachelor	5%
Total	100%	Master	8%
		Ph. D. or ABD	84%
School's Course Load:	Percent	Total	100%
2 to 4 courses per year	58%		
5 to 6 courses per year	30%	Faculty Rank:	Percent
more than 6 courses per year	12%	Visitor or Instructor	· 8%
Total	100%	Assistant - New	62%
		Assistant - Switched	20%
Faculty Identity Reveled	Percent	Associate	5%
Yes	45%	Full or Chair	5%
No	55%	Total	100%
Total	100%		

After the data was collected, it was coded, entered into SPSS (statistical software package) and analyzed. Table 1 shows us that 95% of the respondents were from nationally or internationally accredited schools (such as AACSB accreditation). Ninety-four percent of the respondents were from the United States and six percent of the professors are from non-US institutions.

As seen in Table 1, 84% of the respondents have earned a Ph. D. or were ABD (All But Dissertation) in a doctorial program. Eighty-two percent of the respondents were either new assistant professors or assistant professors who were switching jobs. Five percent of the faculty held the rank of Associate Professor and five percent were Full Professors. Approximately 59%

of the respondents were inexperienced faculty with three years or less of full time teaching experience. Our sample produced an average overall MIS faculty salary of $91,790 which is slightly higher than the AACSB average of $88,325 for new hires [2].

Many factors included in the survey were suspected to have impacts on faculty compensation. A bivariate correlation test was conducted between the compensation and all possible factors collected by the survey. Table 2 shows factors that have significant Pearson's correlations with faculty compensation. Among these factors, we see that school characteristics such as summer support, research budget, moving support, course load, tenure requirements, and location correlate significantly to compensation. In addition, professor profile factors which include degrees, publications, rank, and teaching experience also are correlated with compensation.

TABLE 2
Factors Significantly Correlated with Compensation

Factor Description	0.01 Level	Factor Description	0.01 Level
Years Teaching	.401	Moving Support	.386
Top Tier Journal Publications	.539	Course Load	-.485
Other Refereed Articles	.556	Position	.610
Total Articles	.540	USA or Foreign	.518
Summer Support Per Year	.534		0.05 Level:
Years of Summer Support	.616	PhD: Yes or No	.271
Research Budget	.378	Tenure Requirements	.300

After inspecting the bivariate relationship of each factor and the faculty compensation, a function listed as Equation 1 was developed. Equation 1 includes the multivariate contribution of these factors towards faculty compensation and is used to analyze the joint impacts of these factors. Those variables were entered into a multivariate regression model following the step-wise sequence. Furthermore, the model residuals were analyzed to examine the fitness of the model.

$$Y = \sum_{i=1}^{m} \beta s_i X s_i + \sum_{j=1}^{n} \beta p_j X p_j \tag{1}$$

Where:
Y = Faculty compensation
Xs_i's = School factors
Xp_j's = Professor profile factors

While many factors are tested for entering the model, only factors with significant ($p < .05$) impacts are included. The linear regression model that was considered a best-fit in representing Equation 1 was found via least square estimation. The resulting multiple regression model is displayed below as Equation 2.

$$Y = \beta_0 + \beta s_1 X s_1 + \beta s_2 X s_2 + \beta s_3 X s_3 + \beta p_1 X p_1 + \beta p_2 X p_2 \tag{2}$$

Where:

Xs_1 = Course load per year in course sections
Xs_2 = Summer support per year in dollars
Xs_3 = Research budget per year in dollars
Xp_1 = 1, if the respondent is an Instructor; 2, if the respondent is an assistant professor; 3, if the respondent is a associate professor; 4, if the respondent is a full professor or department chair
Xp_2 = Number of journal articles published by the respondent

From the regression results summarized in Table 3, we first see that five factors are significant in explaining the variation in faculty compensation. An examination of school-related factors reveals that course teaching load has a negative impact on the faculty compensation by approximately \$2,374 per course section. The reason could be that teaching schools, where higher teaching loads are required, pay lower compensation than the research schools where lower teaching loads are the norm. Accordingly, schools that offer higher summer support and research support offer higher salaries.

TABLE 3
Regression Factors Explaining Variance in Compensation

Regression Model Factor	Description of Factor	Estimated Coefficient	Standard Error	t-test	Significance
β_0	Constant	69,478	7,484	9.283	.000
βs_1	Course Load	-2,374	376	-6.317	.000
βs_2	Summer Support Per Year	.647	.162	3.981	.001
βs_3	Research Budget	2.104	.663	3.175	.004
βp_1	Position	10,546	3507	3.007	.006
βp_2	Total Articles	686	267	2.571	.017

Besides the three factors from schools, the remaining significant factors are from professors' profiles. Professors' scholarly outputs play an important role in determining their compensation. According to the regression results, each published journal article increases the author's annual compensation by \$686 per year. Although this may seem to be a relatively small increment, the accumulated sum over a professor's life-time career can be substantial. Swidler and Goldreuer [10] have applied this concept in the field of finance by estimating the total net present value of an article in terms of professor compensation. Professors with all ranks are present in our data and we found that rank plays a significant role in the determination of salary. Finally, the overall model produces an r-square of .899 and an adjusted r-square of .886 which is significant at the .0001 level. Therefore, the model accounts for 88.6% of the variation in MIS faculty compensation. These results are limited to new faculty members or faculty members who recently changed jobs.

CONCLUSION

With the AACSB promoting clearer personnel policies we should search for better ways to quantify and measure the productivity of professors. This model could be used to make recommendations to university administrators regarding how to compensate MIS faculty. It can augment vague qualitative inputs with a quantitative model for salary determination and promotion. It also provides guidance to MIS faculty regarding career management and how to increase salary. Faculty should understand their value so they can negotiate a realistic compensation package. Rational and efficient faculty compensation can be an important variable for attracting qualified individuals to academic professions.

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