University of North Alabama

Briefing Paper from the Department of Institutional Research, Planning, and Assessment

This paper provides an analysis of the results of an employer survey conducted during the Fall 2009 semester measuring employer perception of University of North Alabama graduates

Prepared by
Molly J. Vaughn
Coordinator of Analytical Service

Institutional Research, Planning, and Assessment
University of North Alabama

Published March 2010

EXECUTIVE SUMMARY

The third iteration of the Employer Survey was disseminated on November 17, 2009 to employers of UNA graduates. A total of 117 employers responded, which gives a response rate of 5.9 percent for the Fall 2009 administration.
The following report outlines some areas of improvement as well as areas of concern:

- According to the analysis, the skill/competency/knowledge areas of multi-media presentations, technical report writing, statistical analysis, and understanding of applied computer skills are areas in which UNA graduates are meeting the expectation of employers.

- The comparison of UNA graduates to graduates of other colleges/universities demonstrates that UNA scored significantly higher in satisfaction scores on 17 out of the 20 skills and on all seven subscales.

- Examining the skills of global business awareness and global cultural differences/diversity indicated an environment where the means of satisfaction is greater than the means of importance. This indicates UNA graduates may be exceeding employer expectations in some skill areas.

- The skills where UNA graduates seem to need the most improvement are ability to work with others, diligence in completing task, written communication, oral communication, listening skills, diversity/multi-cultural appreciation, problem analysis skills, planning management, decision-making skills, leadership skills, reliability (taking responsibility), and honesty/integrity.

- Employers ranked honesty/integrity as the highest skill they desired in an employee. This is the only skill in which UNA graduates significantly increased from 2006 to the 2009 administration, even though improvement is still needed in this area as shown in the performance gap analysis.

- UNA graduates scored significantly less on the information technology subscale when compared to the 2006 data, indicating that UNA graduates' understanding of information technology and applied computer skills has decreased when compared to the 2006 data.

- The Office of Institutional Research, Planning, and Assessment will re-evaluate the process of distributing the survey in hopes of obtaining a larger representative sample during the next iteration.

INTRODUCTION

As part of UNA's on-going strategy to increase its visibility and enhance its reputation and image in the minds of its key constituents in the state and the surrounding region, the Board of Trustees approved a three-year cycle of stakeholder satisfaction surveys on March 7, 2003. The Employer Survey was one of the four satisfaction surveys approved. A pilot study was dispensed by the Department of Institutional Research, Planning, and Assessment in the spring of 2000.

The current iteration of the survey was administered in November 2009 as part of the three-year cycle. The survey contains three sections, each containing the same 20 questions.

The sections were defined as:

- *Rate the importance to your organization* – An examination of this will aid the institution in understanding the important skills, competencies, and knowledge areas that employers look for in a graduate.

- *Rate the level possessed by employees who are graduates of UNA* – The employer will be asked to rate their satisfaction of UNA graduates within each of these areas. This satisfaction scale can then be compared to the importance scale above to acquire an overall sense of how well UNA is doing to meet the expectations of these employers.

- *Rate the level possessed by employees who are graduates of other colleges/universities* – The employer is further asked to rate their satisfaction of graduates from other colleges/universities. This allows a comparison group from which the University may gather data contrasting UNA graduates with graduates from other colleges/universities.

This report will focus on analysis of descriptive information for each question, performance gaps based on the difference between the importance of skills to employer satisfaction that UNA graduates possess those skills, UNA satisfaction results compared with 2006 by question and subscale, and UNA satisfaction results compared to graduates of other institutions by question and subscale.

METHODOLOGY

This study examined employer levels of importance and satisfaction to specific graduate skills. In many cases throughout this study, employers were asked to rank the importance of a particular skill within their organization. Subsequently the employer was asked to rank their satisfaction with UNA graduates on these same skills. Respondents to this study were selected using a simple random sample of 2,000 UNA employers listed within an Alumni database (n=500). The design of the instrument was based, in part, on the Importance-Performance Model (Sethna, 1982; Kotler & Fox, 1985; Polcyn, 1986; Luna, 1997; and Martilla & James, 1977).

Respondents were contacted by e-mail and directed to go to a web site where the survey was located. Reponses were minimal (less than 3 percent) by way of online administration. Therefore, a paper survey was mailed to each employer. The packet contained a letter from the President of UNA explaining the importance of the survey, a copy of the instrument, as well as a pre-paid return envelope. Response was much greater with the paper administration with 117 of the 500 surveyed responding (23.4 percent).

…employers were asked to rank the importance of a particular skill within their organization. Subsequently the employer was asked to rank their satisfaction with UNA graduates on these same skills.

The survey consisted of 20 questions. Some of these 20 questions were contained within a subscale. A subscale combines certain questions in order to obtain an overall theme. The instrument has a total of seven subscales (interpersonal skills, communication skills, analytical skills, knowledge about business practice, knowledge/ethical responsibilities, knowledge about the global economy, and information technology).

A significant portion of the survey asked respondents to indicate the importance of 20 skills/competency/knowledge areas that are important to the employer's organization. The employers then were asked to indicate their level of satisfaction with the same 20 skills/competency/knowledge areas relating it to UNA graduates within their organization. Although categories of importance and satisfaction were measured using two different Likert-type scales, both contained four options (importance scale: 1 = not important to 4 = very important; satisfaction scale: 1 = below average to 4 = outstanding). Simple statistics were used to identify the measures of least importance, most importance, least satisfied, and most satisfied (Appendix I, Table 1). The importance measure mean for a particular skill was then subtracted from the satisfaction measure mean for that same skill. The difference between the two measures was referred to as the Performance Gap. Higher Performance Gaps indicated areas where UNA was least meeting employer expectations, and negative gaps signify where UNA was exceeding expectations (Appendix II, Chart 1). Also, comparative analysis of 2006 satisfaction scores with 2009 satisfaction scores of UNA graduates per question and subscale where evaluated using Studentized t-test (Appendix I, Table 2). Finally, UNA's 2009 satisfaction scores were compared to the 2009 satisfaction scores of graduates from other universities (Appendix I, Table 3).

A total of 117 respondents completed the instrument for a response rate of 5.9 percent of the total employer population on file (2,000). For the sample size to be significant at the .05 level, a sample of at least 333 was needed based on the following formula:

$$s = \frac{X^2 NP(1-P)}{d^2(N-1) + X^2 P(1-P)}$$

Note: s = sample size required; X2 = the table value of chi-square for 1 degree of freedom at the desired confidence level; N = the population size; P = the population proportion (assumed to be .50 since this would provide maximum sample size; d = the degree of accuracy expressed as a proportion (Krejcie & Morgan, 1970)

Using the formula, the actual response size of 117 does not meet this requirement for generalizing to the entire population. However, the findings of this study can be useful in evaluating employer's perceptions of UNA graduates. Based upon paper-pencil format, research of response rate and representativeness has found that:

> It is not necessarily true that representativeness increases monotonically with increasing response rate ... recent research has shown that surveys with very low response rates can be more accurate than surveys with much higher response rates (Krosnick, 1999, p. 540).

IMPORTANCE/SATISFACTION MEASURES

A total of 20 attributes (questions) pertaining to skill/competency/knowledge areas demonstrated by UNA graduates and graduates from other colleges/universities were included in the survey. These questions were split into seven subscales. Employers indicated the level of importance of each skill/competency/knowledge area needed by graduates working in their organizations. The employers then indicated their level of satisfaction with UNA graduates as well as graduates from other colleges/universities on these same attributes. Measuring both the importance and satisfaction of these 20 attributes gives the institution a better understanding of skills employers deem important. The attributes used in the study were:

Measuring both the importance and satisfaction of these 20 attributes will give the institution a better understanding of skills employers deem important.

- Interpersonal skills
    - Ability to work with others
    - Diligence in completing task
- Communication skills
    - Written communications
    - Oral communications
    - Listening skills
    - Diversity, multi-cultural appreciation
    - Multi-media presentation skills
    - Presentation skills
    - Technical report writing
- Analytical skills
    - Problem analysis skills
    - Statistical analysis skills
- Knowledge about business practice
    - Planning management
    - Decision-making skills
    - Leadership skills
- Knowledge/ethical responsibilities
    - Reliability (taking responsibility)
    - Honesty and integrity
- Knowledge about the global economy
    - Global cultural differences and diversity
    - Global business awareness
- Information technology
    - Understanding of information technology
    - Understanding of applied computer skills

A 4-point Likert-type scale was used for both the measures of importance and satisfaction (importance scale 1 = not important to 4 = very important; satisfaction scale 1 = below average to 4 = outstanding). Mean values for both the importance and satisfaction measures of each attribute were calculated. The importance measure for each attribute then was compared to the satisfaction

measure for that same attribute. These comparisons were used to develop Performance Gap analysis charts and radar charts which were used to further understand employers' needs and to evaluate the areas in which UNA graduates met, exceeded, or needed improvement.

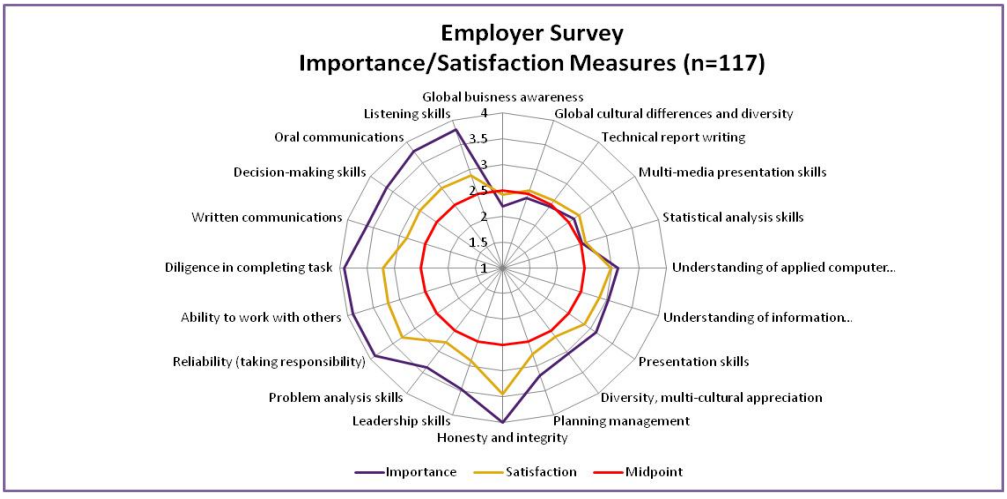
Performance Gap analysis is a somewhat simplistic measure to show the relationship of how satisfied a respondent is with a particular attribute in relation to how important the respondent believes that same attribute to be. The Performance Gap is a measure of the difference between the importance and satisfaction measure for a particular attribute. Larger gaps may indicate where the institution is least meeting respondent expectations.

The three environments of meeting expectations, not meeting expectations, and exceeding expectations can be seen in the radar graph…

A radar graph, sometimes called a star or spider graph, is laid out in a circular fashion, rather than the more common linear arrangement, and consists of axis lines that start in the center of a circle and extend to its periphery. These graphs are mainly used to measure the relationship of two variables on a single attribute. In this case, the variables consist of the grouped means of importance and satisfaction. Each axis represents an attribute within the survey and is arranged to begin in the center with the lowest value and extend toward the outside with increasing value. The means of each variable as it relates to a particular attribute are plotted on the axis of that attribute.

How to read the Radar chart

The purple line going across each axis represents the measure of importance while the gold line represents the measure of satisfaction. The lines of importance and satisfaction are plotted on each axis to correspond to the grouped mean for each measure. The midpoint is plotted as a reference to the average of the response options (midpoint = 2.5, on a 1-4 scale). From this graph, three environments exist.



An environment where the purple and gold lines are touching, or are very close to each other, indicates that the institution is meeting employer demand, no

matter how low or high that demand may be. When the purple mean is higher than the gold mean, a gap exists indicating an environment where UNA graduates are not meeting demand. The larger the gaps in this environment, the less UNA graduates are meeting demand. When the measures are reversed and the gold mean is greater than the purple mean, another type of gap exists indicating an environment where UNA graduates may be exceeding the expectations of the employer. This could be attributed to a lack of knowledge on the part of the respondent as to the importance of a particular attribute or it could signal institutional overkill within that same attribute. The three environments of meeting expectations, not meeting expectations, and exceeding expectations can be seen in the radar graph of all respondents in the study.

Meeting Expectations

Looking from the top of the graph and moving clockwise, the skill/competency/knowledge areas of technical report writing, multi-media presentations, statistical analysis, and understanding of applied computer skills are all attributes where the measure of importance is close to or overlaps the measure of satisfaction.

Not Meeting Expectations

Based upon the differences between the higher measures of importance to the lower measure of satisfaction, the graph indicates smaller gaps in understanding of information technology and presentation skills. The larger gaps consist of diversity/multi-cultural appreciation, planning management, honesty/integrity, leadership skills, problem analysis skills, reliability (taking responsibility), ability to work with others, diligence in completing task, written communication, decision-making skills, oral communication, and listening skills. The chart on the next page shows a representation of the skills with the largest performance gaps.

Exceeding Expectations

Examining the skills of global business awareness and global cultural differences/diversity indicates an environment where the means of satisfaction is greater than the means of importance.

Respondents also indicate that global business awareness, global cultural differences/diversity, technical report writing, multi-media presentations, and statistical analysis had the lowest levels of importance, indicating that employers did not place a lot of importance on these skills when evaluating the performance of an employee.

Gap Analysis

Mean values for both the importance and satisfaction measure of each item were calculated, and the Performance Gap was created by finding the difference between the two variables. For example, if the mean of importance for a particular attribute is 4, and the satisfaction for that same attribute is 2, the Performance Gap would be 2. Higher Performance Gaps indicate areas on which the institution may want to concentrate.

A graphical representation of the five largest Performance Gaps appears below. The graph indicates that listening skills, oral communication skills, decision-making skills, written communications, and diligence in completing task may be the areas where the institution needs to direct its focus. These higher Performance Gaps seem to correspond with the information gained from the radar graph. The performance gaps for all 20 skills/competency/knowledge areas can be seen in Appendix II, Chart 1.

As stated earlier, the Studentized t-test statistic was used to evaluate differences between groups. In comparing the 2006 data of the employer survey to the 2009 results it was found that only one question was statistically significant: honesty and integrity. UNA graduates had higher satisfaction scores on this skill in 2009 than in 2006. This is noteworthy because employers ranked this as the most important skill they desired in an employee (mean = 3.99).
Only one of the seven subscales was significantly different - information technology. Even though this is not one of the most important skills desired by employers (3.07), UNA graduates had a decline in satisfaction scores from 2006 to 2009 (Appendix I, Table 2).

The comparison of UNA graduates to graduates of other colleges/universities demonstrates that UNA scored significantly higher in satisfaction scores on 17 out of the 20 skills (diversity/multi-cultural appreciation, problem analysis skills and global business awareness were not significant; however, UNA scored higher on these questions as well). Furthermore, UNA's overall subscale scores were statistically significant on all seven subscales when compared to graduates from other colleges and universities (Appendix I, Table 3).

CONCLUSION

The purpose of this study was to measure the behaviors and preferences of employers of UNA graduates, and then to assess their perception as to how UNA met their expectations. The desired outcome of this research was to create strategy to increase the visibility and enhance the reputation and image of UNA in the minds of its key constituents in the state and the surrounding region. The main issue that needs to be addressed is the performance gaps; employers importance of certain skills and their satisfaction with UNA's graduates. The objective is to have smaller gaps within each of these areas on the next iteration of the survey. Furthermore, the process of distribution and response rate needs to be evaluated in the hopes of obtaining a representative sample.

It is recommended that UNA administer this survey on a consistent basis in order to gain pertinent longitudinal data regarding employer feedback. The adjustments made in regard to the results will, expectantly, produce skilled graduates in the areas important to our constituents.

Appendix I.
Table 1.
Mean Information

Employer Survey 2009 Mean Information	N	Importance	Satisfaction with UNA graduates	Satisfaction with graduates of other institutions
Interpersonal skills				
Ability to work with others	117	3.89	3.21	2.80
Diligence in completing task	116	3.91	3.20	2.76
Subscale Mean		3.90	3.20	2.78
Communication skills				
Written communications	117	3.62	2.86	2.59
Oral communications	116	3.78	2.92	2.59
Listening skills	117	3.81	2.88	2.62
Diversity, multi-cultural appreciation	117	3.04	2.65	2.42
Multi-media presentation skills	115	2.62	2.72	2.43
Presentation skills	117	3.12	2.85	2.52
Technical report writing	115	2.46	2.60	2.32
Subscale Mean		3.21	2.78	2.50
Analytical skills				
Problem analysis skills	117	3.38	2.78	2.56
Statistical analysis skills	117	2.52	2.59	2.35
Subscale Mean		2.95	2.68	2.45
Knowledge about business practices				
Planning management	116	3.21	2.76	2.49
Decision-making skills	116	3.64	2.88	2.63
Leadership skills	117	3.48	2.89	2.65
Subscale Mean		3.44	2.84	2.59
Knowledge/ethical responsibilities				
Reliability (taking responsibility)	116	3.90	3.28	2.83
Honesty and Integrity	117	3.99	3.45	2.94
Subscale Mean		3.94	3.37	2.88
Knowledge about the global economy				
Global cultural differences and diversity	115	2.42	2.57	2.33
Global business awareness	116	2.18	2.42	2.26
Subscale Mean		2.30	2.49	2.30
Information Technology				
Understanding of information technology	115	3.03	2.87	2.52
Understanding of applied computer skills	116	3.11	2.98	2.60

Subscale Mean		3.07	2.92	2.56

Appendix I.
Table 2.
Comparative Analysis

Employer Survey Comparative Analysis 2006 - 2009 T-Test results	UNA graduates 2006	UNA graduates 2009	Difference
nterpersonal skills			
Ability to work with others	3.12	3.21	0.09
Diligence in completing task	3.04	3.20	0.16
Subscale Mean	3.88	3.90	0.02
Communication skills			
Written communications	2.78	2.86	0.08
Oral communications	2.87	2.92	0.05
Listening skills	2.88	2.88	0.00
Diversity, multi-cultural appreciation	2.79	2.65	-0.14
Multi-media presentation skills	2.67	2.72	0.05
Presentation skills	2.76	2.85	0.09
Technical report writing	2.51	2.60	0.09
Subscale Mean	3.29	3.21	-0.08
Analytical skills			
Problem analysis skills	2.78	2.78	0.00
Statistical analysis skills	2.56	2.59	0.03
Subscale Mean	3.14	2.95	-0.19
Knowledge about business practices			
Planning management	2.77	2.76	-0.01
Decision-making skills	2.81	2.88	0.07
Leadership skills	2.80	2.89	0.09
Subscale Mean	3.45	3.44	-0.01
Knowledge/ethical responsibilities			
Reliability (taking responsibility)	3.08	3.28	0.20
Honesty and Integrity	3.19	3.45	0.26
Subscale Mean	3.88	3.94	0.06
Knowledge about the global economy			
Global cultural differences and diversity	2.46	2.57	0.11
Global business awareness	2.41	2.42	0.01
Subscale Mean	2.48	2.29	-0.19
Information Technology			
Understanding of information technology	2.87	2.87	0.00
Understanding of applied computer skills	2.87	2.98	0.11
Subscale Mean	3.28	3.08	-0.20

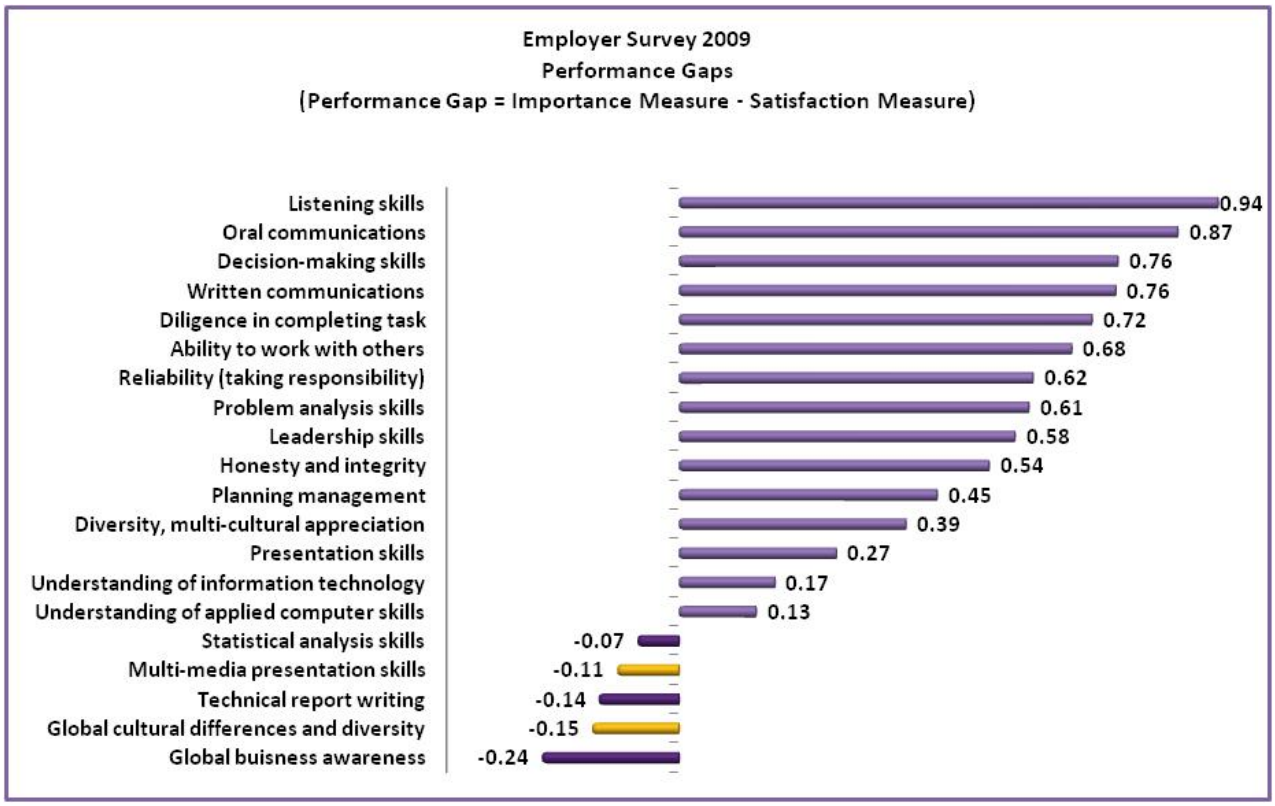
*Differences in RED text signify a statistically significant difference.

Appendix I.
Table 3.
UNA graduates compared to graduates of other institutions

Employer Survey 2009 UNA graduates compared to graduates of other institutions T-Test results	UNA graduates 2009	Graduates of other colleges 2009	Difference
Interpersonal skills			
Ability to work with others	3.21	2.80	0.41
Diligence in completing task	3.20	2.76	0.44
Subscale Mean	3.20	2.78	0.42
Communication skills			
Written communications	2.86	2.59	0.27
Oral communications	2.92	2.59	0.33
Listening skills	2.88	2.62	0.26
Diversity, multi-cultural appreciation	2.65	2.42	0.23
Multi-media presentation skills	2.72	2.43	0.29
Presentation skills	2.85	2.52	0.33
Technical report writing	2.60	2.32	0.28
Subscale Mean	2.79	2.50	0.29
Analytical skills			
Problem analysis skills	2.78	2.56	0.22
Statistical analysis skills	2.59	2.35	0.24
Subscale Mean	2.68	2.46	0.22
Knowledge about business practices			
Planning management	2.76	2.49	0.27
Decision-making skills	2.88	2.63	0.25
Leadership skills	2.89	2.65	0.24
Subscale Mean	2.85	2.60	0.25
Knowledge/ethical responsibilities			
Reliability (taking responsibility)	3.28	2.82	0.46
Honesty and Integrity	3.45	2.94	0.51
Subscale Mean	3.37	2.89	0.48
Knowledge about the global economy			
Global cultural differences and diversity	2.57	2.33	0.24
Global business awareness	2.42	2.26	0.16
Subscale Mean	2.51	2.31	0.20
Information Technology			
Understanding of information technology	2.87	2.52	0.35
Understanding of applied computer skills	2.98	2.60	0.38
Subscale Mean	2.91	2.57	0.34

*Differences in RED text signify a statistically significant difference.

Appendix II.
Chart 1.
Performance Gaps



BIBLIOGRAPHY

Kotler, P., & Fox, K.A. (1985). *Strategic marketing for educational institutions*. Englewood Cliff, NJ; Prentice-Hall

Krejcie, R. V., & Morgan, D. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.

Krosnick, J. (1999). Survey research. *Annual Review of Psychology*, *50*, 537-567.

Luna, A.L. (1997). Measuring both importance and satisfaction to achieve a greater understanding of residence hall life. *The Journal of College and University Student Housing*, 27(1), 25-33.

Martilla, J., and James, J. (1977). Importance-performance analysis. *Journal of Marketing*, 41, 77-79.

Pike, G.R. & Simpson, M. E. (1997). The relationship between academic achievement and satisfaction: Evidence of moderating effects for academic and social integration. Paper presented at the Annual Forum of the Association for Institutional Research, 37th, Orlando, Florida.

Polcyn, L. J. (1986). A two-instrument approach to student satisfaction measurement. *College and University*, 62(1), 18-24.

Sethna, B.N. (1982). Extensions and testing of importance-performance analysis. *Business Economics*, 17(4), 28-31.