Statistical Analysis of the 2002-2003 Missouri Association of Student Financial Aid Personnel Salary Survey

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Introduction

Purpose and Utility of Survey

The main objective of the 2002-2003 Missouri Association of Student Financial Aid Personnel (MASFAP) Salary Survey is to discover the impact of pre-determined variables on the Annual Salary of higher education financial aid professionals in the state of Missouri. The Missouri Association of Student Financial Aid Personnel (MASFAP) "is dedicated to serving students, opening avenues to access the benefits of higher education and advocating for the maintenance of high ethical standards in the financial aid profession." It is open to any person who is involved directly in the higher education financial aid profession in the state of Missouri. Currently there are 621 registered members. The MASFAP Salary Survey will provide the members of MASFAP with benchmarks for salaries depending on the following variables; Institution Enrollment, Type of Institution, Institution Offerings, Education Level, Years of Service, Gender, Employment Status and Title of Position. It will also be used to point out any discrepancies in salaries caused by the above-mentioned variables. Comparison will be also be made between this survey and the 2000-2001 MASFAP Salary Survey. The 2002-2003 MASFAP Research Committee prepared this Salary Survey in accordance with the stated informational needs of the association.

Survey Administration

The survey was administered through a web-based interface at the following Internet address, http://www.slu.edu/services/fin_aid/masfap/ (see Appendix A) and all data (see Appendix Q) was captured in a database. This web address was sent via an electronic mail message (see Appendix B) to the all of the members of MASFAP on September 18, 2003. On October 6, 2003 there were 139 respondents and it was decided to send a second electronic mail message (see Appendix B) to encourage more members to complete the survey. This increased the number of respondents by 32 to a total of 171. The survey was closed to additional responses on October 10, 2003. For analysis purposes, a sample size of 171 (27.5%) out of a population of 621 should provide a very good indication of MASFAP's overall trends.

Variables and Descriptions

The MASFAP Research Committee chose the eight independent variables and the categories within each variable, Institution Enrollment, Type of Institution, Institution Offerings, Education Level,

Years of Service, Gender, Employment Status and Title of Position (see Appendix C). These variables were chosen because of they are believed to have a direct impact on Annual Salary. All of these independent variables are ordinal variables, except Gender and Employment Status, which are nominal variables. Ordinal variables draw relevance from the order of the categories within them. For example, Institution Offerings has five categories (see Appendix C). They have been assigned the values of 1 through 5 for data analysis purposes, but the order has importance since each category is a higher institutional offering than the previous lower number. For example, a Bachelor's Degree, value of 3, is a higher offering than an Associate Degree, value of 2. Gender and Employment Status are nominal since the values of 1 and 2 are assigned to Female/Male and Part-time/Full-time for data collection purposes only. Data analysis cannot be performed on these variables in the same manner as it is performed on the ordinal variables. The categories within the ordinal variables, as well as the variables themselves, are subjective but were chosen using the best judgment of the MASFAP Research Committee. All analysis on this survey was done using the statistical software package title SPSS. SPSS can do all of the heavy mathematics associated with Descriptive and Regression Analysis.

Descriptive Statistic Analysis

Definition

Descriptive statistics refers to descriptions of the data set itself. Descriptive statistics include mean, median, standard deviation, as well as analysis of the population being surveyed. The following are some examples of descriptive analysis on the MASFAP Salary Survey data. 171 financial aid professionals responded, salaries ranged from $6,500 to $68,000, (see Appendix D). Of the 171 respondents, 143 were female, 28 were male. This corresponds with the results of the 2001 survey in which 86% of the respondents were female. It also corresponds to the membership of MASFAP, which is predominately female. The females' salaries ranged from $6,500 to $65,600, as opposed to the males', which ranged from $10,000 to $68,000. This shows that the respondents with the lowest salaries were female, while those with the highest salaries were male. More attention will be paid to the relationship between gender and income in later sections of this report.

Mean (Average)

The term mean, or average, represents the number, which is considered typical of the group. The mean is calculated by taking the sum of all the values divided by the number of values. The mean Annual Salary reported in 2003 is $31,866 (see Appendix D) and was calculated by adding all of the Annual Salaries and dividing by 171. This mean gives us a reference point when comparing salaries.

Median and Mode

The term median refers to the number that falls exactly in the middle of the data set. The median Annual Salary for this survey was $30,000 (see Appendix D), which means that half of the respondents' salaries fell above $30,000, and half fell below $30,000. The mode is the most commonly occurring number. In this case the mode was $22,000, which means that more people earned $22,000 than any other amount.

Standard deviation

The standard deviation is a measure of the variation in a given data set. A large standard deviation means that the data varies widely, where a smaller value represents a much tighter and more peaked bell curve. The standard deviation for Annual Salary in the 2003 MASFAP Salary Survey was $12,208 (see Appendix D). Standard Deviation is used to discover the ranges that most Annual Salaries fall into. For example, 68% of the population will be contained within +/-1 standard deviation, 95% within +/-2 standard deviation, and 99.7% within +/-3 standard deviations.

Descriptive Statistic Analysis Conclusions

The mean Annual Salary reported in the MASFAP 2001 Salary survey was $30,590. Therefore the average Annual Salary increased by 4 percent to $31,866 in two years. The mode ($19,000 to $22,000) and median ($28,750 to $30,000) salaries also increased from 2001 to 2003. These increase show the impact of the increase of salaries for the entire population. Since, now half of all individuals make more than $30,000 instead of $28,750 and now the most common Annual Salary is $22,000 instead of $19,000. The decrease from $12,268 to $12,208 in standard deviation displays that individuals are closer to the mean Annual Salary in 2003 than 2001. This information combined with the increases in mode and median point toward a tighter and higher grouping of Annual Salary for Financial Aid professionals. So, even though the mean Annual Salary has only increase 4%, there are more individuals receiving higher Annual Salaries.

The standard deviation of $12,208 signifies that 68% of the reported salaries fall within one standard deviation of the mean Annual Salary $31,866, or within the range of $19,658 to $44,074. Additionally, 95.5% of the salaries fall within two standard deviations, or in the $7,450 to $56,282. Even though the actually range of salaries was between $6,500 and $63,000 (see Appendix D), 95.5% of those salaries were between $7,450 and $56,278. One or two extreme values account for the difference between the maximum values and the range of salaries determined by the standard deviation.

The mean Annual Salary among women was $30,401 and $39,349 among men, compared with $29,262 and $38,500 in 2001, respectively (see Appendix J). This indicates that the average male surveyed earns 29% more than the average female, which relates to 32% more in 2001. Some of the discrepancies between mean Annual Salary for male and female survey participants can be explained by analyzing the percentages of each Gender by each of the Positions (see Appendix J). Of the males participants 57% have positions of Associate Director or Director compared to 27% for the females. The Clerical/Support Staff position has 20% of the females while none of the male population. These statistics help explain the discrepancies between the male and female mean salaries, but they do not explain the heavy discrepancies of the upper management positions being heavily populated by males and the clerical/support staff positions being heavily populated by the females. The standard deviation among the male population was $13,354, as opposed to $11,459 among the female population. This difference can partly be attributed to the variability of the two groups, and partly to the fact that five times as many women replied to the survey than men.

Analyzing the Mean Salaries for each of the individual variables (see Appendices E – L) it can be seen that the Highest Education Level of Individual (see Appendix H) has the most obvious impact on mean Annual Salary. Beginning with High School Graduate/GED and continuing to Master's Degree the Annual Salary means are $22,491, $24,037, $29,265, $30,294, $34,493, and $44,121. This reinforces the logical concept of education level having a direct impact on Annual Salary. The variable of Position also has an obvious impact on Annual Salary (see Appendix L). Two discrepancies in this data are seen in Systems/Program Analyst as well as Associate Director. The first can be explained by the increased importance of computers and technology with in the Financial Aid industry and thus the increased Annual Salary. The institutions defining Associate Director differently may explain the second.

Multiple Regression Analysis

Definition

Linear Regression is a statistical tool used to predict the value of a dependent variable based on a single independent variable. An example of this would be using Highest Education Level as the independent variable and Annual Salary as the dependent variable from the 2003 MASFAP Salary Survey. Using SPSS to complete a Linear Regression Model (see Appendix M) a linear equation can be constructed using least squares estimation to determine the coefficient that relates the numeric value of Highest Education Level to Annual Salary (see Appendix C for numeric values).

Annual Salary = 10,122 + 4,416 * (Highest Education Level)

The word coefficient refers to the value that the independent variable is multiplied by to determine its effect on the dependent variable. In this equation, 4,416 is the coefficient for Highest Education Level. This coefficient measures the change in Annual Salary when Highest Education Level changes by a single value. For example, if an individual's Highest Education Level changes from Associate Degree (numeric value 4) to a Bachelor's Degree (numeric value 5) then the expected increase in Annual Salary would be $4,416. So a person with a Bachelor's Degree should have an Annual Salary of $32,202 (10,122 + 4,416*5). This statement is too strong of a statement, since Annual Salary is effected by many variables and the data shows that not all individuals with a Bachelor's degree have an Annual Salary of $32,202. This is where Multiple Regression, which will be addressed later, can be used to create a better model for predicting Annual Salary. By definition, multiple regression implies the effect of multiple independent variables on a single dependent variable. This makes much more sense for this Salary Survey, since there are many more variables effecting Annual Salary other than Highest Education Level.

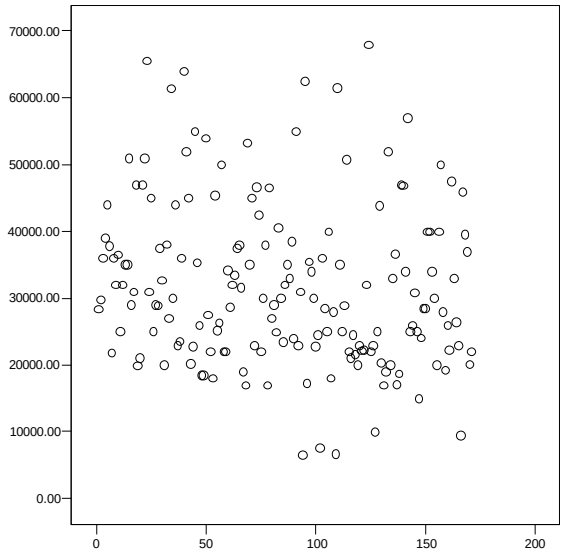
Validity and Reliability

The validity of the Linear Regression equation can be measured mathematically by the R-Square value of the model. The R-Square measures how the amount of change in the dependent variable can be explained by the independent variable. For the above example, Annual Salary = 10,122 + 4,416 * (Highest Education Level), SPSS calculates the R-Square to be .285 (see Appendix M). This R-Square shows the validity of Annual Salary being described by Highest Education Level. The R-Square ranges between 0 and 1 and shows more validity the closer it is to 1, where values above .5 are preferred. Therefore, the

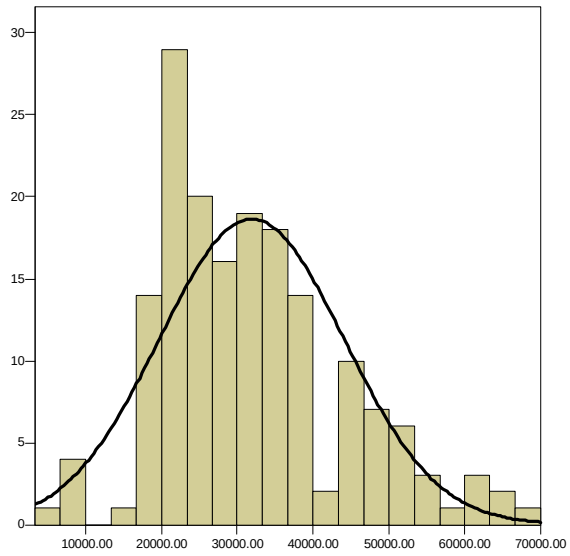
above equation is not valid for determining Annual Salary, just as it was suspected and that the data showed. If the R-Square value had been above .5 then it could be stated that Highest Education Level is valid in predicting Annual Salary, but then the reliability of the overall Linear Regression model would need to be figured. The reliability of the Linear Regression equation can be measured mathematically by the p-value of the model as well as the p-value of each individual variable. The p-value needs to be below the chosen percentage of reliability. In the above example the overall p-value and the p-value of the Highest Education Level variable are .000 (see Appendix M) and are below .05, which represents a desired reliability of 95%. So, if the R-Square had been above .5 then this model and it's variables could have been seen as reliable as well as valid.

Criteria

To construct a Multiple Regression Model the dependent variable must be random. Looking at the Scatter Plot (below) of Annual Salary graphed by order of entry it can be determined that Annual Salary is random.



The Multiple Regression Model also requires that the dependent variable be normally distributed. Normal distribution is achieved when the graph of data is bell shaped and symmetric around the mean. Analyzing the Annual Salary Histogram Graph (below), it can be determined that Annual Salary is close to being normal distributed. This allows continued regression analysis.



Even though this data is not perfectly normally distributed it still shows that regression analysis will be useful. There are complicated smoothing and transformation tools that can be used to create more normally distributed data, but these will not be addressed in this analysis.

Variables Used

SPSS can calculate the independent variables that have the most validity to Annual Salary. Using SPSS's forward addition of variables tool it can be shown that Position, Number of Years Service, Highest Education Level of Individual, Employment Status, Institution Type, and Institutional Enrollment have the highest combined R-Square value of .689 (see Appendix N). As stated above, R-Square signifies the variables chosen describe the amount of change in Annual Salary better than any other combination of variables. A simplified explanation of SPSS's forward addition of variables is SPSS calculating the variable that best describes Annual Salary (highest R-Square), then calculating the variable that in combination with the previous variable best describes Annual Salary (combined highest R-Square), and so on using all of the combinations of variables.

Using SPSS's backward variable elimination tool confirms the previous results of not including the Highest Institutional Offerings and Gender variables in the analysis. SPSS's backward variable elimination does the opposite of the forward addition of variables. It begins with all of the variables and removes every combination of variables that have the least amount of impact on Annual Salary; the R-Square actually increases when the variables are removed. The p-value of Highest Institutional Offerings

and Gender are .787 and .111, respectively, and both above .05 (95%) and this shows the low validity of these variables (see Appendix N).

Therefore the Multiple Regression model will be constructed using the following variables; Position, Number of Years Service, Highest Education Level of Individual, Employment Status, Institution Type, and Institutional Enrollment.

Multiple Regression Model

Using Multiple Regression and SPSS (see Appendix O) the following model is constructed, just as above in linear regression, using least squares estimation to determine the coefficients of each of the variables (see Appendix C for numeric values).

14 + 2,451(a) + 2,596(b) + 2,028(c) + 6,999(d) – 1,128(e) + 905(f)

a = Position
b = Number of Years Service
c = Highest Education Level
d = Employment Status
e = Institution Type
f = Institutional Enrollment

In the equation above 2,451 is the coefficient for the variable Position (a), 2,596 is the coefficient for the variable Number of Years Service (b), and so on. As in Linear Regression, each of these coefficients measures the change in Annual Salary when an individual variable changes by a single value. For example, if a person's Position changed from Administrative Assistant (numeric value of 2) to Counselor (numeric value of 3) and none of the other variables changed, then the expected Annual Salary would increase by $2,451 dollars. This interpretation continues with the rest of the variables; a change in Number of Year Service and no other changes results in a Annual Salary increase of $2,596, a change in Highest Education Level and no other changes results in a Annual Salary increase of $2,028, a change in Employment Status and no other changes results in a Annual Salary increase of $6,999, a change in Institution Type and no other changes results in a Annual Salary decrease of $1,128, and a change in Institutional Enrollment and no other changes results in a Annual Salary increase of $905.

Multiple Regression Validity and Reliability

Before the Multiple Regression model can be used to predict Annual Salary it's validity and reliability must be measured. As in the Linear Regression model, R-Square measures the validity of the variables in describing Annual Salary and p-values measures the reliability of the overall model and each of

the variables. The R-Square for the model is .689, which is above .5 and the p-value for the overall model is .000, which is below .050. The p-values for the variables (.000, .000, .000, .031, .002, and .018, see Appendix O) are all below .05 as well. Therefore, the variables within this model are valid and reliable and the model itself is reliable in predicting Annual Salary. Since SPSS was used to choose the variables that produced the best results this step of checking validity and reliability is redundant, but is shown here for clarity purposes. If SPSS had not chosen the variables to use in the Multiple Regression model, then this step becomes very important.

The Beta value is a statistic that is important in Multiple Regression, but not in Linear Regression. The Beta value shows the relative importance of each independent variable or the size of their impact on the independent variable. This importance is calculated by the absolute value of the Betas for each variable (see Appendix O). The absolute values of the Betas, ranked from highest to lowest, for this model are .530, .249, .245, .167, .131, and .097. These correspond to the variables Position, Number of Years Service, Highest Education Level of Individual, Institution Type, Institutional Enrollment, and Employment Status.

Multiple Regression Analysis Conclusions

This multiple variable equation can be used to forecast the Annual Salary of an individual based on each of the given variables. Using the following values, a = 2, b = 2, c = 5, d = 2, e = 5, and f = 6, for the six variables the expected Annual Salary can be calculated an for an individual with a Position of Administrative Assistant with 6 – 10 Years of Service, with a Bachelor's Degree, with Full-time Employment, and working at a 4 Year Public Institution with Enrollment of 5,001 – 10,000. The result of these variables is an Annual Salary of $34,036 (see Appendix P). Analyzing the data gathered and using common sense it can be seen that all individuals who are Full-time Administrative Assistants with 6 – 10 Years of Service at a 4 Year Public Institution with Enrollment of 5,001 – 10,000 and with a Bachelor's Degree do not have an Annual Salary of $34,036. The multiple regression model creates an estimation of Annual Salary and the value of $34,036 is called a point estimate. It is just that, an estimate for an individual fitting the above criteria. For this model to be useful a range of salaries around this point estimate must be created. This range is created by first determining how much confidence in the range is required. This confidence interval is determined by multiplying the standard error of the estimate by the t-value. The standard error of the estimate is calculated by SPSS (see Model Summary in Appendix O) and

is 6,935. The t-value is 1.98 and is determined by the desired 95% confidence in this range and the sample size of 171. Therefore the 95% confidence interval for Annual Salary is $13,731 (6,935 * 1.98). This confidence interval represents the fact that $13,731 below the point estimate and $13,731 above the point estimate are the values of the range of Annual Salaries. Combining the confidence interval ($13,731) with the point estimate ($34,036) produces a range of $20,305 to $47,767. There is 95% chance that a Full-time Administrative Assistants with 6 – 10 Years of Service at a 4 Year Public Institution with Enrollment of 5,001 – 10,000 and with a Bachelor's Degree has a Annual Salary within $20,305 to $47,767. Incorporating the confidence interval into the multiple regression model results in the following model.

14 + 2,451(a) + 2,596(b) + 2,028(c) + 6,999(d) – 1,128(e) + 905(f) +/- $13,731

a = Position
b = Number of Years Service
c = Highest Education Level
d = Employment Status
e = Institution Type
f = Institutional Enrollment

Using this model on four other examples (see Appendix P) the following Annual Salary ranges are calculated. These examples were the most common set of values for the variables and all had 4 individuals that fit their profile. In the 2nd Example there is 95% chance that a Counselor/Advisor/Office Coordinator with 0-5 Years of Service at a 4 Year Private Institution with Enrollment of 10,001 - 25,000 and with a Bachelor's Degree has a Annual Salary within $19,937 to $47,399. In the 3rd Example there is 95% chance that a Counselor/Advisor/Office Coordinator with 0-5 Years of Service at a 4 Year Private Institution with Enrollment of 1,501 - 5,000 and with a Bachelor's Degree has a Annual Salary within $18,127 to $45,589. In the 4th Example there is 95% chance that a Clerical/Support Staff with 0-5 Years of Service at a 4 Year Private Institution with Enrollment of 10,001 - 25,000 and with an Associate Degree has a Annual Salary within $13,007 to $40,469. In the 5th Example there is 95% chance that a Counselor/Advisor/Office Coordinator with 0-5 Years of Service at a 4 Year Private Institution with Enrollment of 501 - 1,000 and with a Bachelor's Degree has a Annual Salary within $13,007 to $40,469.

The multiple regression model also shows that an increase in Position, Number of Years Service, Highest Education Level of Individual, Employment Status, and Institutional Enrollment causes an increase in the point estimate of Annual Salary, since they all have positive coefficients. While an increase in Institution Type category actually results in a decrease in the point estimate of Annual Salary.

The Beta values for the multiple regression model prove that the Position variable has the largest impact among the variables on Annual Salary, followed by Number of Year Service, Highest Education Level of Individual, Institution Type, and Institutional Enrollment down to Employment Status which has the least impact of these variables. This supports that instinctive notion that an individuals Position has the most bearing on their Annual Salary. Since Institution Type and Institutional Enrollment have lower impact than Position, Numbers of Year Service and Highest Education Level this reveals that across the different institutions in Missouri the Annual Salary for persons with the same Position, Numbers of Year Service and Highest Education Level should be relative close.

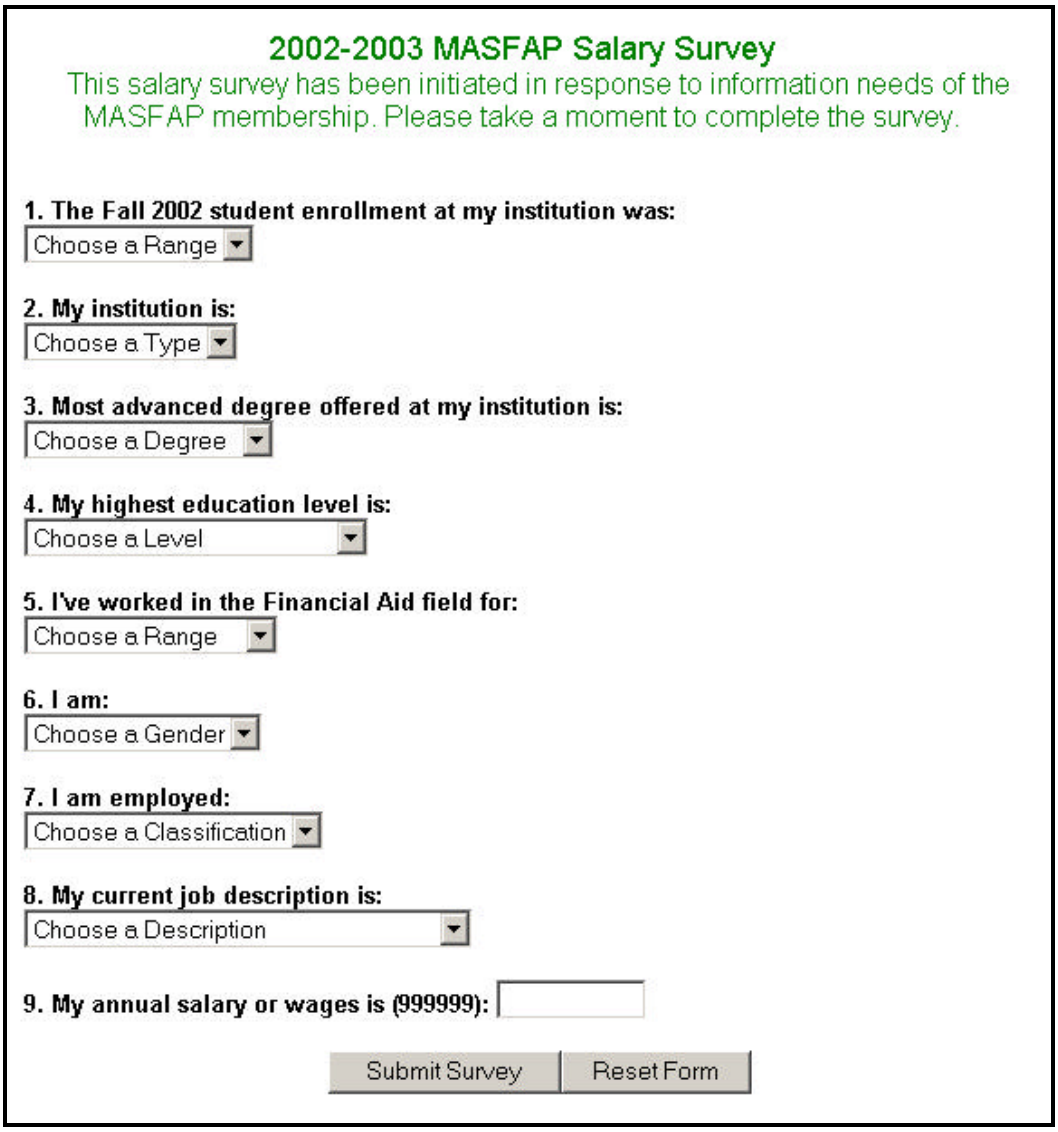
Impact of Web Interface

There were only 146 respondents when this survey was administered in 2001, compared to 171 in 2003. The use of the web interface and electronic mail can be seen as the catalysts for the improved response rate. The individual members of MASFAP no longer needed to take the additional time of mailing their paper responses and did not have to be concerned with the privacy of their answers. Using the web interface also eased the data analysis. All data was collected in a very usable digital format that could be imported into Microsoft Excel or SPSS directly. This eliminated all of the manual entering of data from returned paper surveys, dramatically reducing the man-hour cost of administrating this survey.

Future Considerations

There are a number of ways that this survey can be improved to better serve MASFAP. Additional independent variables could be added. Two reasons for having only eight variables were due to amount of space on a single sheet of paper and the amount of time used in manually entering this data into a computer. With the use of the web based interface these restrictions have been eliminated. Other possible variables are population of city that that institutions is located in, number of institutions in area, number of staff members in office, number of staff members in institution, or size of institutions budget/endowment. A second area of improvement is the categories within the current variables. Years of Service is an obvious choice needing change since they results were heavily skewed toward the lower categories. Using a single year or two year increments could have a better effect on the data. The Title of Position variable could also have additional categories or the current categories could be split up, for example Counselor/Advisor/Office Coordinator could be three separate categories.

Appendix A – Web-Based Interface



2002-2003 MASFAP Salary Survey

This salary survey has been initiated in response to information needs of the MASFAP membership. Please take a moment to complete the survey.

1. The Fall 2002 student enrollment at my institution was:
Choose a Range

2. My institution is:
Choose a Type

3. Most advanced degree offered at my institution is:
Choose a Degree

4. My highest education level is:
Choose a Level

5. I've worked in the Financial Aid field for:
Choose a Range

6. I am:
Choose a Gender

7. I am employed:
Choose a Classification

8. My current job description is:
Choose a Description

9. My annual salary or wages is (999999):

Submit Survey | Reset Form

Appendix B – Electronic Mail Messages

Electronic Message #1

Subject: 2003 MASFAP Salary Survey and Research Committee Notes
Date: Thu, 18 Sep 2003 16:01:45 -0500
From: Janice K. Barnes
To: masfap-l@listsrv.cmsu.edu

Colleagues:

The MASFAP Research committee is pleased to make available the 2003 MASFAP Salary Survey. Please follow the link below and complete the 2003 Salary Survey online. Please forward the 2003 MASFAP Salary Survey link to all members of your staff in order for the Research Committee to evaluate as much data as possible. The survey results will be available at the Fall conference and on the MASFAP website.

http://www.slu.edu/services/fin_aid/masfap/survey.php

This message is cross posted to MASFAP-L and all MASFAP Primary contacts as listed in the MASFAP directory.

Respectfully submitted:
MASFAP Research Committee
Janice Barnes, Chair
Tracy Thomson

Electronic Message #2

Subject: Time is running out... Complete the 2003 MASFAP Salary Survey ONLINE
Date: Mon, 06 Oct 2003 14:13:57 -0500
From: Janice K. Barnes
To: masfap-l@listsrv.cmsu.edu

Institutional Members:

If you have not done so already, please take a few minutes to complete the 2003 MASFAP Salary Survey. Completing the survey is easy....follow the link below in order to help MASFAP gather as much data as possible. Please also remember to forward this message to all staff members in your offices who are not subscribed to MASFAP-L

http://www.slu.edu/services/fin_aid/masfap/survey.php

Thanks and Have a great week!
Janice Barnes

Appendix C -Independent Variable Definitions and Translations

Institutional Enrollment (Ordinal)

1 = Less than 50
2 = 51 - 250
3 = 251 - 500
4 = 501 - 1,500
5 = 1,501 - 5,000
6 = 5,001 - 10,000
7 = 10,001 - 25,000
8 = More than 25,000

Institution Type (Ordinal)

1 = Proprietary
2 = Vocational
3 = 2 year Public
4 = 2 year Private
5 = 4 year Public
6 = 4 year Private

Highest Institutional Offerings (Ordinal)

1 = Certificate/Degree
2 = Associate Degree
3 = Bachelor's Degree
4 = Master's Degree
5 = Doctoral Degree

Highest Education Level of Individual (Ordinal)

1 = Some High School
2 = High School Graduate/GED
3 = Some College
4 = Associate Degree
5 = Bachelor's Degree
6 = Some Graduate
7 = Master's Degree
8 = Doctoral Degree

Number of Year Service (Ordinal)

1 = 0 - 5 Years
2 = 6 - 10 Years
3 = 11 - 15 Years
4 = 16 - 20 Years
5 = 21 - 25 Years
6 = More than 25 Years

Gender (Nominal)

1 = Female
2 = Male

Employment Status (Ordinal)

1 = Part-Time
2 = Full-Time

Position (Ordinal)

1 = Clerical/Support Staff
2 = Administrative Assistant
3 = Counselor/Advisor/Office Coordinator
4 = Systems/Program Analyst
5 = Manager/Supervisor/Division Chief
6 = Assistant Director
7 = Associate Director
8 = Director
9 = Dean/Vice President

Appendix D – Overall Descriptive Statistics

2003 MASFAP Salary Survey

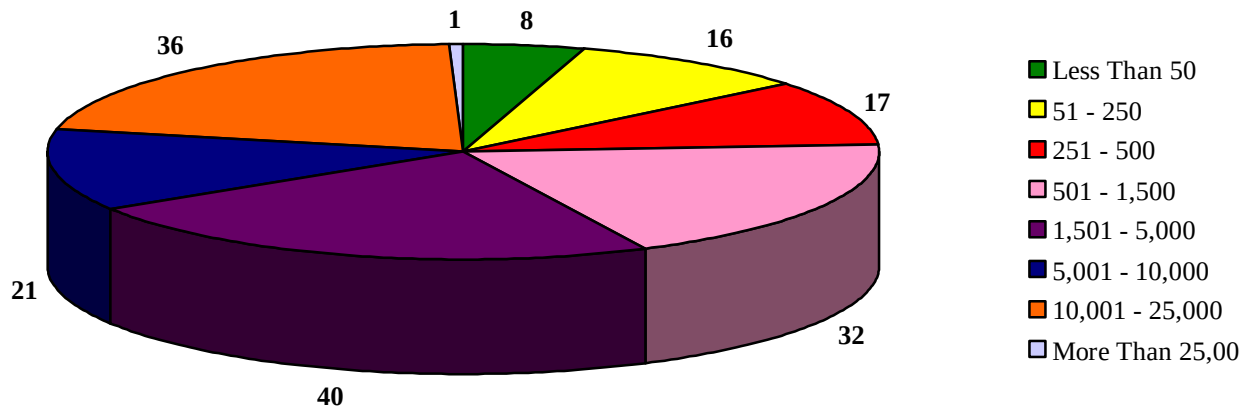
2003	Count		Minimum	Maximum		Mode	Std. Dev.
Annual Salary	171	31,866	6,500	68,000	30,000	22,000	12,208

2001 MASFAP Salary Survey

2001	Count	Mean	Minimum	Maximum	Median	Mode	Std. Dev.
Annual Salary	146	30,590	13,000	71,000	28,750	19,000	12,268

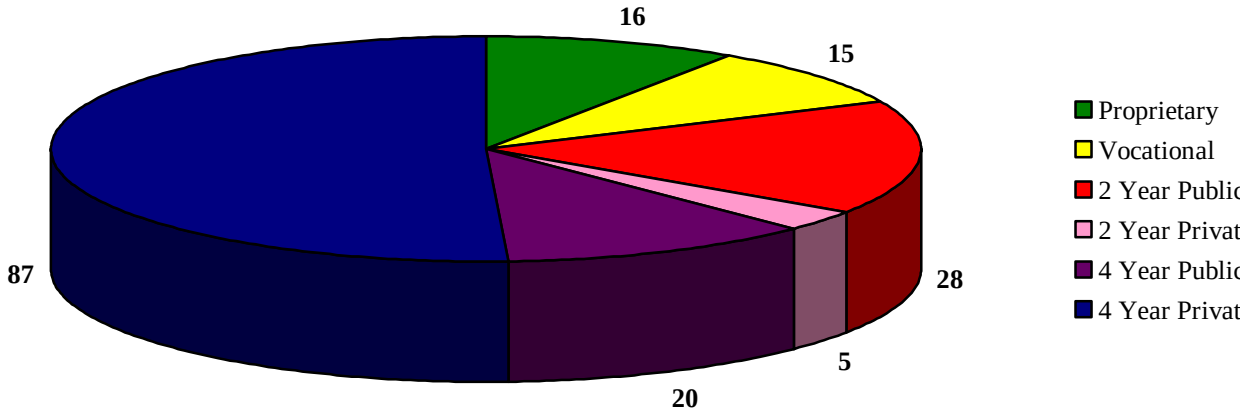
Appendix E – Mean, Count, Percent by Institutional Enrollment

	2003			2001		
Institutional Enrollment	Salary Mean	Count	Percent	Salary Mean	Count	Percent
Less Than 50	36,063	8	4.7%	38,525	4	2.7%
51 - 250	32,325	16	9.4%	29,188	14	9.6%
251 - 500	32,646	17	9.9%	25,463	13	8.9%
501 - 1,500	29,538	32	18.7%	33,553	17	11.6%
1,501 - 5,000	32,151	40	23.4%	32,292	25	17.1%
5,001 - 10,000	32,472	21	12.3%	31,194	31	21.2%
10,001 - 25,000	30,940	36	21.1%	29,234	42	
More Than 25,000	61,400	1	0.6%	0	0	0.0%
Group Total	31,866	171	100.0%	30,590	146	100.0%



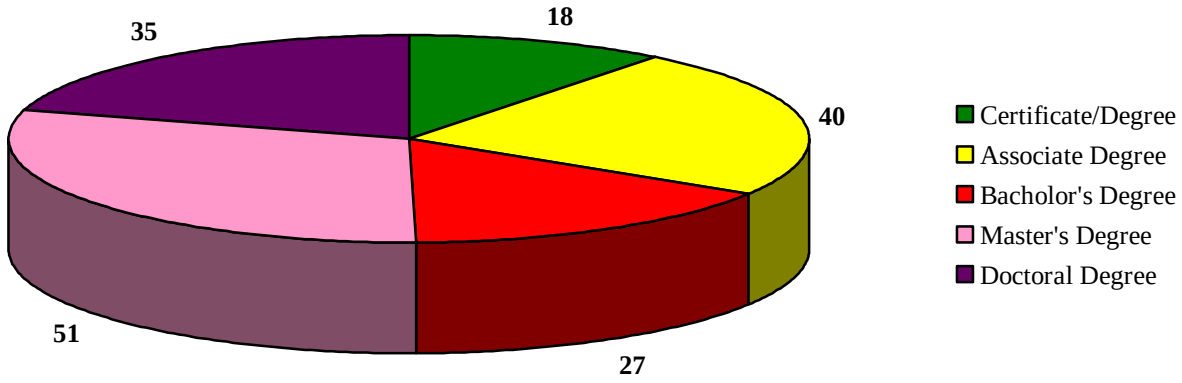
Appendix F – Mean, Count, Percent by Institutional Type

	2003			2001		
Institution Type	Salary Mean	Count	Percent	Salary Mean	Count	Percent
Proprietary	32,465	16	9.4%	31,350	7	4.8%
Vocational	40,067	15	8.8%	34,686	7	4.8%
2 Year Public		28	16.4%		29	19.9%
2 Year Private	29,640	5	2.9%	30,950	4	2.7%
4 Year Public	34,617	20	11.7%	30,704	39	26.7%
4 Year Private	30,042	87	50.9%	29,631	60	41.1%
Group Total	31,866	171	100.0%	30,590	146	100.0%



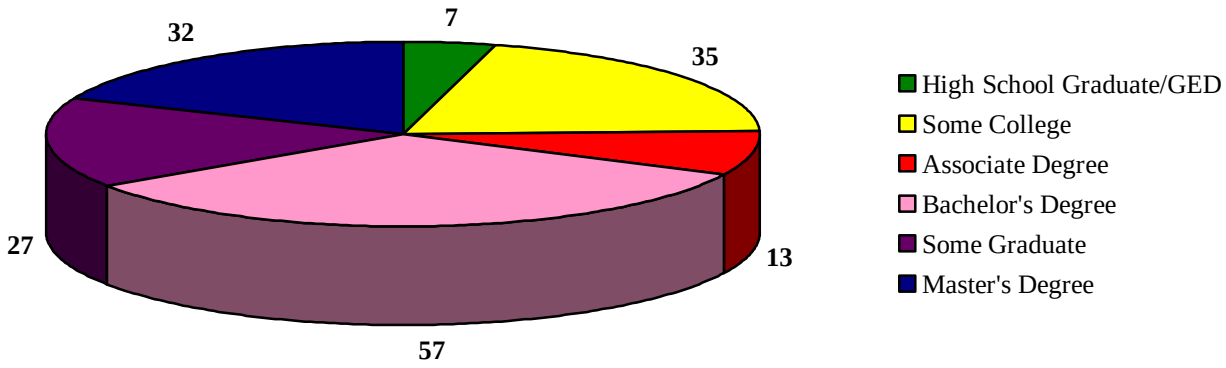
Appendix G – Mean, Count, Percent by Highest Institutional Offerings

	2003			2001		
Highest Institutional Offerings	Salary Mean	Count	Percent	Salary Mean	Count	Percent
Certificate/Degree	36,639	18	10.5%	34,625	12	8.2%
Associate Degree	31,841	40	23.4%	30,724	35	24.0%
Bachelor’s Degree		27	15.8%		13	8.9%
Master's Degree	29,946	51	29.8%	28,790	68	46.6%
Doctoral Degree	34,443	35	20.5%	33,613	18	12.3%
Group Total	31,866	171	100.0%	30,590	146	100.0%



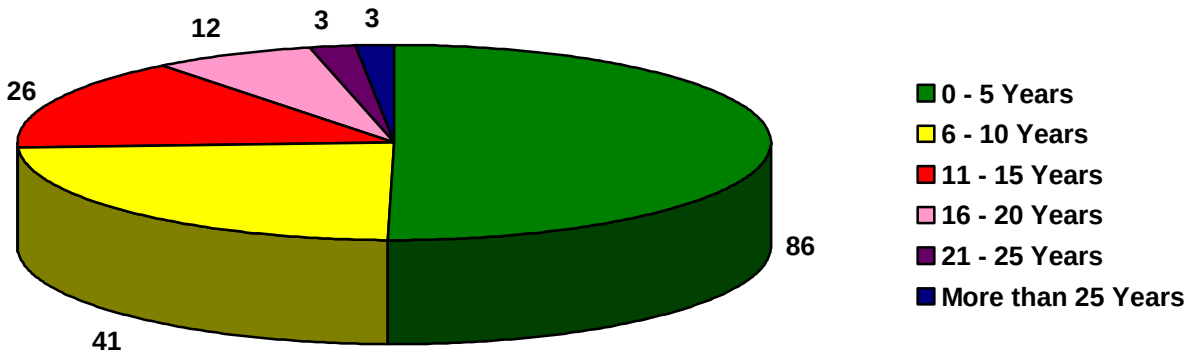
Appendix H – Mean, Count, Percent by Education Level

	2003			2001		
Highest Education Level of Individual	Salary Mean	Count	Percent	Salary Mean	Count	Percent
High School Graduate/GED	22,491	7	4.1%	21,999	12	8.2%
Some College	24,037	35	20.5%	21,953	20	13.7%
Associate Degree		13	7.6%		14	9.6%
Bachelor's Degree	30,294	57	33.3%	28,296	46	31.5%
Some Graduate	34,493	27	15.8%	31,290	20	13.7%
Master's Degree	44,121	32	18.7%	44,315	30	20.5%
Doctoral Degree	0	0	0.0%	44,633	3	2.1%
Other Professional	0	0	0.0%	38,000	1	0.7%
Group Total	31,866	171	100.0%	30,590	146	100.0%



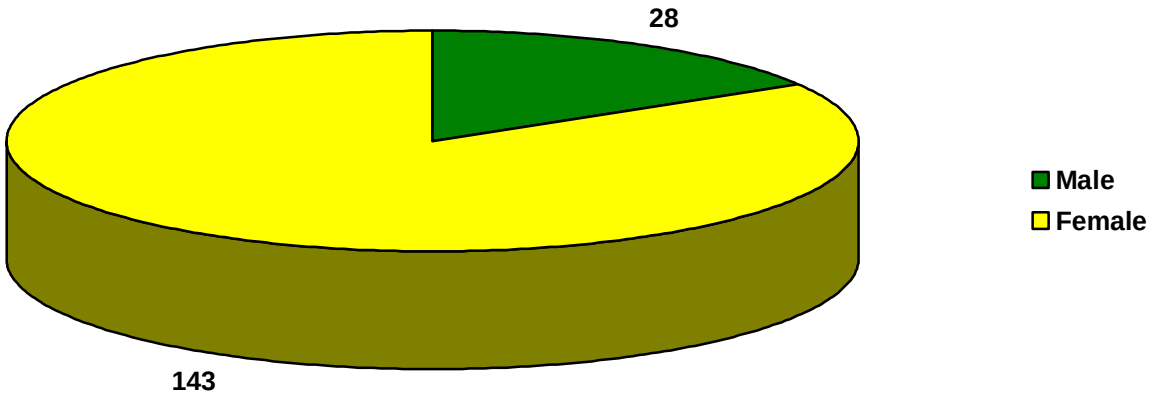
Appendix I – Mean, Count, Percent by Number of Years Service

	2003			2001		
Number of Years Service	Salary Mean	Count	Percent	Salary Mean	Count	Percent
0 - 5 Years	25,602	86	50.3%	24,234	70	47.9%
6 - 10 Years	36,123	41	24.0%	33,249	36	24.7%
11 - 15 Years		26	15.2%		19	13.0%
16 - 20 Years	45,823	12	7.0%	40,807	7	4.8%
21 - 25 Years	48,781	3	1.8%	48,352	10	6.8%
More than 25 Years	40,700	3	1.8%	41,710	4	2.7%
Group Total	31,866	171	100.0%	30,590	146	100.0%



Appendix J – Mean, Count, Percent, etc. by Gender

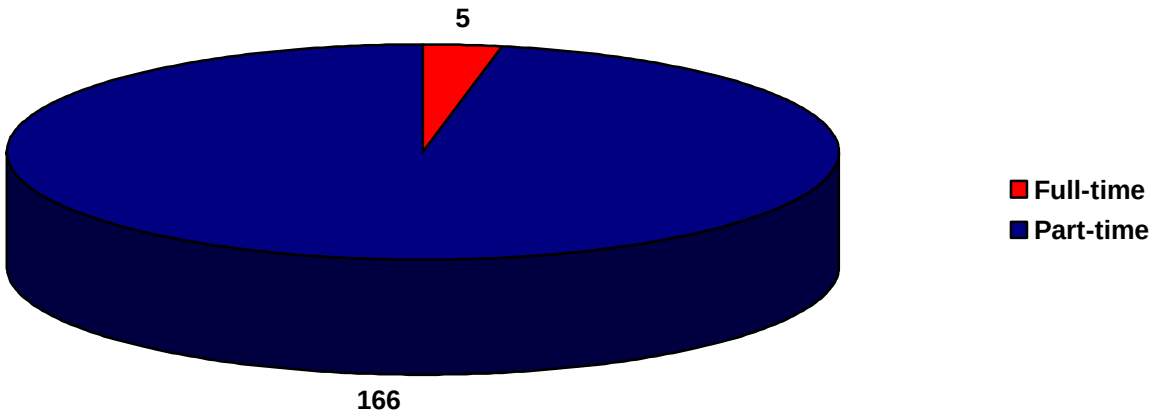
	2003			2001		
Gender	Salary Mean	Count	Percent	Salary Mean	Count	Percent
Male	39,349	28	16.4%	38,500	21	14.4%
Female	30,401	143	83.6%	29,262	125	85.6%
Group Total		171	100.0%		146	100.0%



	Male		Female	
Position	Count	Percent	Count	Percent
Clerical/Support Staff	0	0.0%	29	20.3%
Administrative Assistant	2	7.1%	7	4.9%
Counselor/Advisor/Office Coordinator	7	25.0%	50	35.0%
Systems/Program Analyst	1	3.6%	1	0.7%
Manager/Supervisor/Division Chief	2	7.1%	5	3.5%
Assistant Director	0	0.0%	13	9.1%
Associate Director	3	10.7%	5	3.5%
Director	13	46.4%	33	23.1%
Group Total	28	100.0%	143	100.0%

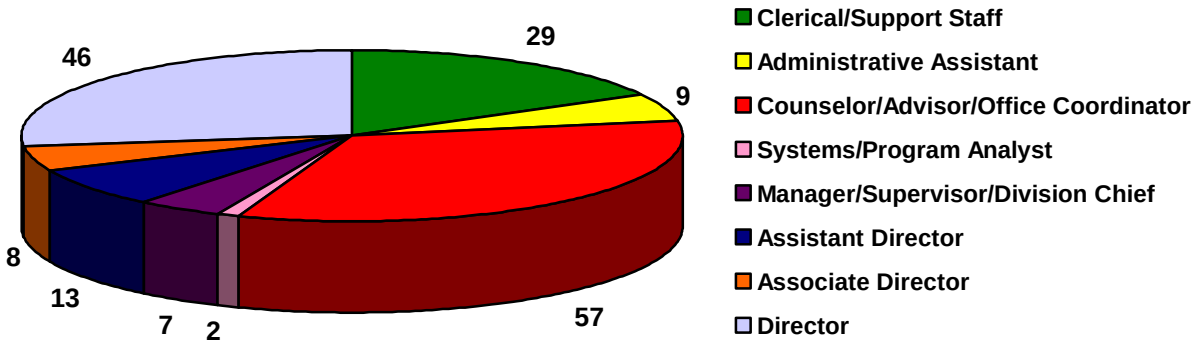
Appendix K – Mean, Count, Percent, by Employment Status

	2003			2001		
Employment Status	Salary Mean	Count	Percent	Salary Mean	Count	Percent
Full-time	18,522	5	2.9%	13,000	1	0.7%
Part-time	32,268	166	97.1%	30,711	145	99.3%
Group Total		171	100.0%		146	100.0%



Appendix L – Mean, Count, Percent, by Position

	2003			2001		
Position	Salary Mean	Count	Percent	Salary Mean	Count	Percent
Clerical/Support Staff	19,710	29	17.0%	18,985	34	23.3%
Administrative Assistant	21,622	9	5.3%	21,511	5	3.4%
Counselor/Advisor/Office Coordinator		57	33.3%		50	34.2%
Systems/Program Analyst	43,000	2	1.2%	37,457	2	1.4%
Manager/Supervisor/Division Chief	38,929	7	4.1%	34,150	6	4.1%
Assistant Director	38,131	13	7.6%	35,402	12	8.2%
Associate Director	36,350	8	4.7%	0	0	0.0%
Director	43,744	46	26.9%	44,180	36	24.7%
Dean/Vice President	0	0	0.0%	36,000	1	0.7%
Group Total	31,866	171	100.0%	30,590	146	100.0%



Appendix M – Linear Regression Analyst

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1				

a Predictors: (Constant), Highest Education Level of Individual

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	p
1	Regression	7215157170.050		7215157170.050		
	Residual	1812076728.803		107223474.727		
	Total	2533592498.854				

a Predictors: (Constant), Highest Education Level of Individual
b Dependent Variable: Annual Salary

Coefficients(a)

		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)					
	Highest Education Level of Individual					

a Dependent Variable: Annual Salary

Appendix N – Multiple Regression Analyst

Forward Variable Addition

Model	R Square	Adjusted R Square	Std. Error of the Estimate
(a)	.543	.541	8273.90654
(b)	.602	.598	7744.71095
(c)	.654	.648	7240.88489
(d)	.669	.661	7112.60323
(e)	.678	.668	7032.98083
(f)	.689	.677	6934.89700

a Predictors: (Constant), Position

b Predictors: (Constant), Position, Number of Years Service

c Predictors: (Constant), Position, Number of Years Service, Highest Education Level of Individual

d Predictors: (Constant), Position, Number of Years Service, Highest Education Level of Individual, Employment Status

e Predictors: (Constant), Position, Number of Years Service, Highest Education Level of Individual, Employment Status, Institution Type

f Predictors: (Constant), Position, Number of Years Service, Highest Education Level of Individual, Employment Status, Institution Type, Institutional Enrollment

Backward Variable Elimination

Model		Model	T	P
2	Highest Institutional Offerings	(a)	.270	.787
3	Highest Institutional Offerings	(b)	.366	.715
	Gender	(b)	-1.602	.111

a Predictors in the Model: (Constant), Position, Employment Status, Gender, Number of Years Service, Highest Education Level of Individual, Institutional Enrollment, Institution Type

b Predictors in the Model: (Constant), Position, Employment Status, Number of Years Service, Highest Education Level of Individual, Institutional Enrollment, Institution Type

c Dependent Variable: Annual Salary

Appendix O – Multiple Linear Regression of Chosen Variables

Model Summary

1				

a Predictors: (Constant), Institutional Enrollment, Highest Education Level of Individual, Employment Status, Number of Years Service, Institution Type, Position

ANOVA(b)

Model			df	Mean Square	F	p
1	Regression	17448705792.422		2908117632.070		
	Residual	7887218606.432				
	Total	25335924398.854				

a Predictors: (Constant), Institutional Enrollment, Highest Education Level of Individual, Employment Status, Number of Years Service, Institution Type, Position

b Dependent Variable: Annual Salary

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
1	(Constant)					
	Position					
	Number of Years Service					
	Highest Education Level of Individual					
	Employment Status					
	Institution Type					
	Institutional Enrollment					

a Dependent Variable: Annual Salary

Appendix P – Multiple Linear Regression Examples

1st Example

a = 2, Position = Administrative Assistant
b = 2, Number of Years Service = 6 – 10 Years Service
c = 5, Highest Education Level = Bachelor's Degree
d = 2, Employment Status = Full-time
e = 5, Institution Type = 4 Year Public
f = 6, Institutional Enrollment = 5,001 – 10,000

Point Estimate

14 + 2,451(2) + 2,596(2) + 2,028(5) + 6,999(2) – 1,128(5) + 905(6) +/- 13,731 = 32,580 +/- 13,731

Annual Salary Range with 95% confidence interval

$20,305 to $47,767

2nd Example

a = 3, Position = Counselor/Advisor/Office Coordinator
b = 1, Number of Years Service = 0 - 5 Years Service
c = 5, Highest Education Level = Bachelor's Degree
d = 2, Employment Status = Full-time
e = 6, Institution Type = 4 Year Private
f = 7, Institutional Enrollment = 10,001 - 25,000

Point Estimate

14 + 2,451(3) + 2,596(1) + 2,028(5) + 6,999(2) – 1,128(6) + 905(7) +/- 13,731 = 33,668 +/- 13,731

Annual Salary Range with 95% confidence interval

$19,937 to $47,399

3rd Example

a = 3, Position = Counselor/Advisor/Office Coordinator
b = 1, Number of Years Service = 0 - 5 Years Service
c = 5, Highest Education Level = Bachelor's Degree
d = 2, Employment Status = Full-time
e = 6, Institution Type = 4 Year Private
f = 5, Institutional Enrollment = 1,501 - 5,000

Point Estimate

14 + 2,451(3) + 2,596(1) + 2,028(5) + 6,999(2) – 1,128(6) + 905(5) +/- 13,731 = 31,858 +/- 13,731

Annual Salary Range with 95% confidence interval

$18,127 to $45,589

4th Example

a = 1, Position = Clerical/Support Staff
b = 1, Number of Years Service = 0 - 5 Years Service
c = 4, Highest Education Level = Associate Degree
d = 2, Employment Status = Full-time
e = 6, Institution Type = 4 Year Private
f = 7, Institutional Enrollment = 10,001 - 25,000

Point Estimate

14 + 2,451(1) + 2,596(1) + 2,028(4) + 6,999(2) – 1,128(6) + 905(7) +/- 13,731 = 26,738 +/- 13,731

Annual Salary Range with 95% confidence interval

$13,007 to $40,469

Appendix P – Multiple Linear Regression Examples (Continued)

5th Example

a = 3, Position = Counselor/Advisor/Office Coordinator
b = 1, Number of Years Service = 0 - 5 Years Service
c = 5, Highest Education Level = Bachelor's Degree
d = 2, Employment Status = Full-time
e = 6, Institution Type = 4 Year Private
f = 4, Institutional Enrollment = 501 - 1,000

Point Estimate

14 + 2,451(3) + 2,596(1) + 2,028(5) + 6,999(2) – 1,128(6) + 905(4) +/- 13,731 = 30,953 +/- 13,731

Annual Salary Range with 95% confidence interval

$17,222 to $44,684