Gender Differences in Careers and Salary for Agribusiness Graduates: A Case Study

Marianne McGarry Wolf

California Polytechnic State University

San Luis Obispo, CA 93407

Phone: 805-756-5027

Fax: 805-756-5040

e-mail: mwolf@calpoly.edu

Natalie Wassum, Student, California Polytechnic State University

M. LeRoy Davis, Professor, California Polytechnic State University

American Agricultural Economics Association Annual Meeting

August 5 – 8, 2001

Abstract

This research shows that differences exist in careers and salaries based on gender for the graduates of the California Polytechnic State University Agribusiness Department, although the graduates acquire the same education level. This research is based on data that was collected through the use of a survey instrument with a sample size of 1151.

Introduction

The purpose of this research is to examine the relationship between career opportunities, salary, and gender in agribusiness using a sample of Cal Poly Agribusiness graduates. Women have always played a strong role in the agricultural industry. "Women on the land were responsible for educating and rearing children, duties that were added to, not substituted for, agricultural obligations and/or other household responsibilities, such as cooking and cleaning." (Sadik, 39) Yet, women were not considered the farmer or the owner of the property they tenderly tilled. Women worked long and hard for their husbands without much recognition, because their jobs could not be defined as professional. It was common belief that helping the family farm survive was a woman's duty, not a career, because women did not get paid for their efforts. (Rosenfeld, 9)

Certainly time has passed since this era. Women are now involved in many aspects of agriculture and have made a career in the industry without being in their husband's shadow. Women work in the industry in sales, bookkeeping, strategy marketing, and

fueling successful farming operations in partnership with their husbands (or on their own). They do many of the things men do and are treated with the same respect and fairness. Or are they?

Before examining women in the agricultural industry, it is important to examine the roles of women in society in general. During the last three decades, women have made changes in their relationship to males in education and employment. Increasingly, they have entered college, the workforce, and have continued to participate in their domestic duties. In 1990, the Bureau of Census indicated that 75% of women are high school graduates, a 22% increase from 1970. Further, one out of five women is in college, with 18% of the population of women graduating and earning over half of the total amount of Bachelor's Degrees.

Not only are women going to college in increasing rates, but they are also studying "not so typical" women's topics. Even though the fields such as fine arts and foreign languages continue to be female dominated, women are entering fields like business and are earning up to 47% of the degrees. Women have become interested in these degrees because it gives them a better chance to earn superior financial returns when they enter the job market.

In 1984, a study was done to examine factors that influence female college students and their perception of employment following graduation. The study indicated that the young women were greatly influenced by their mothers' employment status, education levels, and occupations. "Students with mothers who are labor force participants are more likely to perceive themselves employed during their adult years, while students of mothers who are full-time homemakers generally lack this perception." (Weber and

Miller, 162) Not only do these young women in college look to their mothers as role models; they look to successful women in society. In today's society, more women are in the workforce, influencing young girls to follow, thus increasing interest for females to enter the job market.

Close to 29 million women obtain full-time, year-round jobs, with 57% of women sixteen years and older in the labor force. However, the type of career females acquire reflects the male/female gender roles imposed by society. Although women are obtaining a higher educational level, and increasingly entering the job market, they are still not equally represented in many professions. In a recent article by Jo Anne Preston, occupational gender segregation was discussed, and the results found that the job market, sadly, is segregated by sex. Women tend to work in occupations that comprise many other women, while men have occupations which are predominantly male. Occupations that were once male dominated have slowly become feminized over time, because males do not want to share a job perceived as feminine. During the 1970s and 1980s, women entered into many occupations that were normally thought of as male jobs. The women were more likely to enter white collar and service occupations instead of blue-collar jobs. (Preston, 615) As women have transitioned to some male dominated fields, they still do not receive the same type of jobs. "…Women's occupations offer workers little independence. Less control over work, fewer benefits, and scarcer opportunities for advancement than experienced by workers employed in men's jobs." (Preston, 612) These differences in occupation evolved from definitions set up by male dominance in the past, and are kept in place by stereotypical standards when companies hire for a

position. It is found that not only do men get better ranking jobs; they are also paid at a much higher rate. (Preston, 612)

"Women continue to earn far less than their male counterparts in the workplace—a gap, on average, of 30-40 percent. Moreover, the much-discussed 'glass ceiling' remains a continuous challenge for working women." (Sadik, 40)

Interestingly, in a study about differences between male and female promotions and wages, it was found that women have an advantage over men because they receive frequent promotions. Though it appears employers take females seriously in the workforce, in actuality, it is a way for employers to cover up the fact that they do not want women in high positions within their companies. The study concluded that a company hires women at lower levels and promotes in small, quick increments, stopping their ascent into higher positions in the company once they reach a certain level. Men, on the other hand, are hired at a more prestigious level from the beginning and have longer periods between their promotions. While promotions might be slower for men, they mean a higher pay increase, which is not true for women. "The number of promotions does not affect women's wages." (Hersch and Viscusi, 462)

It appears that gender differences exist in salary and career opportunities in the general society. The purpose of this research is to examine agribusiness. Often, when a women works on a farm for her husband, she will not be paid. She is unpaid because it is considered her domestic duty. "It is very difficult even in the mid-1990s to give an accurate accounting of the women involved in one or more aspects of agricultural production, whom can be called the invisible farmer." (Rickson, 93) It is estimated that more women work for no wages in farming and agriculture, than women do for wages.

This occurs because women, throughout history and present day, have little entitlement to the land. Males inherit or own the property, causing females to be dependent on them. As dependents females have little say in how much they will get paid, if even at all.

The College of Agriculture at the University of Nebraska concluded that there are three reasons women have resistance and difficulty when trying to get a job in the agricultural industry. The most apparent is that there are few females involved in the industry who can be seen as role models. (Scaroni, 14) With the lack of role models to follow, young women believe that they cannot succeed in what is seen as a male dominated industry.

Another barrier into entry for women in the agricultural industry is the men themselves. Agriculture is a tough, old industry where the "good ol' boys" usually run things. They refuse to cooperate with women and believe that women should not be involved in the industry at all. (Oshita, 11) These men do not want to work with women, because they believe that women have no business doing a man's job.

However, times are changing. At a conference in May 2000, the Women Leaders in Agriculture recognized the need to explore the role of women in agriculture. Instead of focusing on the lack of recognition women receive in the agricultural industry, the conference focused on the changing number of women moving away from supporting men and assuming a role as pillars of the industry. (Katz, 3) Many successful women spoke at the conference, encouraging other women in agriculture to speak out against negative stereotypes, because no one else will speak for them.

Methodology

This research examines the relationship between career opportunities, salary, and gender in agribusiness using a sample of graduates from the California Polytechnic State University Agribusiness Department. The data was collected through the use of a survey instrument. The survey instrument was administered in June 1998 through the use of a mail questionnaire. A total of 5,000 surveys were mailed to Agribusiness Graduates from the 1950s through the 1990s. The response rate was 23%, with 1150 surveys returned, 335 females and 815 males. Respondents were required to be employed at the time the survey was completed to be included in the sample for this analysis**.** A limitation of this research is the lack of a variable to control for part-time employment. Since the level of measurement of the variables examined is either ordinal or nominal, the chi-square test of independence is used to measure association. Relationships are examined between males and females for the total sample. In addition to examining the total sample, the data was examined decade by decade to control for the influence of experience. There were 319 observations for the decade of the 1990s, with 146 females and 173 males.

Profile of Graduates from the California Polytechnic State University Agribusiness Department

The total sample of respondents is examined in Table 1. Female graduates are more likely to hold the position of middle management and earn lower salaries than males in the long term, with 44% of females earning a current salary between $30,000 to $50,000 per year. Females are more likely to be employed in staff positions and non-agricultural marketing. Male graduates are more likely to be proprietors and work in agricultural production with 42.2% making a current salary of over $70,000 per year. Both females

and males earn a BS/BA degree and work in the agricultural sector. These data indicate that the overall sample of females start their careers with a higher salary than males, reflecting a lower proportion of female graduates in the earlier decades of graduates.

Agribusiness Graduates (1950-1990s) Current Salary and Type of Employment

During the period of analysis, there is a relationship between salary and the type of business wherein a graduate is employed. Table 2 indicates that the graduates tend to earn the highest salaries in farm input-processing/ manufacturing/wholesale and marketing farm products processing. These sectors have a majority of employees earning over $60,000 per year.

Agribusiness Graduates (1950-1990s) Current Salary and Position

Table 3 shows a relationship between salary and type of position. Graduates over the decades with the highest current salary are in the positions of proprietor or upper management executive. The lowest paying positions are staff and entry level employee.

Demographics of 1990s Agribusiness Graduates

Table 4 compares male and female graduates in the decade of the 1990s. Both males and females work in the agricultural sector and earn BS/BA degrees. Females are more likely than males to hold the positions of lower management and staff, while males are more likely to be middle management, upper management, and proprietors. Females are more likely to market non-farm products, while males are involved in agricultural

production. The table also indicates that the majority of males not only start at higher salaries, but they have a higher current salary than females, with 65.2% of females earning less than $40,000 per year compared to 40.5% of males earning less than $40,000 per year.

Agribusiness Graduates (1990s) Salary and Type of Employment

Table 5 indicates that there is a relationship among graduates in the 1990s between the salary and type of business in which they are employed. The majority of graduates earning the highest salary were in the businesses of farm input-processing/ manufacturing/wholesale/retail; marketing farm products and processing; non-agricultural marketing and sales; and non-agricultural production/ manufacturing/ construction; and the service business.

Table 6 analyzes the 1990 female graduates. Although there is a relationship for the total sample, this analysis shows that there is no relationship between salary and the type of business in which a female is employed. There is very little variation between salary and type of employment, since females tend to be in the lower salary levels for each type of employment.

Males exhibit a relationship between salary and the type of business in Table 7. A comparison of Table 6 and Table 7 shows that males earn a higher current salary when compared to females involved in similar businesses. Males appear to achieve higher salary levels in agricultural finance/banking/appraisal/accounting; farm input-processing/manufacturing/wholesale; marketing farm products processing; non-agricultural marketing or sales; and non-agricultural production/manufacturing

/construction; and the service business. Both males and females have a large percentage in the employment of marketing farm products; therefore, their salaries were compared. Of the 20.6% of females employed to market farm products, 7.4% of them earn over $60,000 per year. Of the 24.9% of males employed in the marketing of farm products, 25.7% earn over $60,000 per year.

Agribusiness Graduates (1990s) Current Salary and Position

For the total sample of 1990s Agribusiness graduates, there is a relationship between salary and type of position held within a company. Table 8 shows that the total sample of male and female graduates have the highest current salary in the positions of proprietor and upper management executive. The lowest salaries were attained for entry level employees.

The lack of relationship between salary and position is driven by the females in the sample. Table 9 shows that there is not a relationship for females, while Table 10 shows that there is a relationship between salary and position for males. The lack of a relationship for females is due to the lack of variation by position. It appears that whatever position a female attains, she attains a low salary level.

Agricultural Background and Employment of Agribusiness Graduates (1950–1990s)

Males are more likely to have been raised on a farm or ranch or had ranch or farm experience before entering the Cal Poly Agribusiness Department for study. Table 11

shows that almost a third of females that graduated from the Cal Poly Agribusiness Department did not have farm or ranch experience.

It follows that after graduation, males are more likely to be employed in the agricultural sector. Table 12 shows that almost two-thirds of males are employed in the agricultural sector, while less than half of female graduates are employed in the agricultural sector.

Salary is related to employment in the agricultural sector. Table 13 shows that respondents that are employed in the agricultural sector tend to have higher incomes. Since females are less likely to be employed in the agricultural sector, this may have a negative impact on their salaries.

Agricultural Background and Employment of Agribusiness Graduates (1990s)

For the total sample analysis, males are more likely to have been raised on a farm or ranch or had ranch or farm experience before entering the Cal Poly Agribusiness Department for study. However, during the 1990s, Table 14 indicates there is no difference in the background of males and females, with approximately a third of graduates having had no farm or ranch experience.

However, after graduation, a higher proportion of males are employed in the agricultural sector, while less than half of female graduates are employed in the agricultural sector.

Current salary is related to employment in agricultural jobs.

For the 1990s graduates, salary is not related to employment in the agricultural sector. Therefore, employment in the agriculture sector does not appear to influence the salary of female graduates of the 1990s.

Attitudes Toward Skills Needed for Success

Respondents were asked to rate ten characteristics which describe skills, abilities, attributes, or knowledge necessary for their importance in the success of our Cal Poly graduates. The following rating scale was used: 5 = extremely important; 4 = very important: 3 = somewhat important; 2 = not very important; 1= Not At All important.

Analysis of the mean ratings of the interval data indicates that the characteristics are divided into three groups: somewhat to very important characteristics, somewhat important characteristics, and slightly to somewhat important characteristics. The somewhat to very important characteristics are communication skills, interpersonal skills, managerial, ethical, and computing skills. The somewhat important characteristics are: marketing and selling skills, accounting, financial, and economic problem solving skills. The not very important to somewhat important skills are: Internet skills, technical agriculture knowledge, and management information systems skills.

An examination of the total sample indicates that males and females rank the importance of the ten skills in the same order. However, females rate the following skills higher than males: communication skills such as, writing, speaking, listening; interpersonal skills; computing and quantitative skills; Internet, World Wide Web, e-mail skills; and management information systems skills. Perhaps females rated these skills of

higher importance since they are the skills necessary for low and mid-level staff positions occupied by females.

Similarly, in Table 19, male and female 1990s graduates rank the importance of the ten skills in the same order. The females of this subset of the population rate the following skills higher than males: ethical and moral standards; Internet, World Wide Web, e-mail skills; and management information systems skills. Again, perhaps females rated these skills of higher importance since they are the skills necessary for typical low and mid-level staff positions occupied by females in Table 20 and Table 21.

Attitudes Concerning Skills by Position

Respondents' attitudes toward skills are examined by position: proprietor/upper management, middle and lower management, and staff/entry level. While males tend to be in upper management positions, females tend to be in middle and lower management positions. It was found that graduates in different positions agree on the importance of seven of the ten skills rated, while they differed on the importance of managerial skills, Internet; World Wide Web, e-mail skills; and ethical and moral standards. Upper management indicated that ethical and moral skills and managerial skills are important for success, while respondents in entry level positions indicated that World Wide Web skills are important.

Conclusions

This research shows that differences in careers and salaries exist based on gender for the graduates of the California Polytechnic State University Agribusiness Department. Although male and female Agribusiness graduates acquire the same educational level, they earn different starting salaries, current salaries, and positions in their careers. This research is based on data collected by the Agribusiness Department of the California Polytechnic State University.

The results show that, although males and females earned the same undergraduate degree and have the same highest degree, females earn a lower current salary than males. For example, 44% of females have a current salary between $30,000 to $50,000 per year, while 42.2% of males earn over $70,000. The disparity in salaries between males and females can be explained by the finding that females are employed in lower positions than males. An examination of the data from all five decades shows that most positions held by females were middle management and staff, while males attained the positions of proprietors and middle management. Position and salary are related. As proprietors, males earn a higher salary, since 53.7% of proprietors earn over $70,000 per year. Females' salaries are lower, because 17.4% hold the position of staff members, compared to 6.2% of males. Most staff members earn under $40,000 per year. Further, while males and females were equally likely to have originated from agricultural backgrounds before entering Cal Poly as students, females are less likely than males to attain positions in agriculture. Current salary is related to employment in agricultural jobs.

In addition to examining the total sample, the data was examined decade by decade to control for the influence of experience. There were 331 observations for the decade of the 1990s. Males and females in this group earned the same undergraduate degree and also

have the same highest degree. In the decade of the 1990s a female's starting salary and current salary was lower than a male's starting salary and current salary. Females' salaries were observed to be independent of their positions, while males' salaries and positions were related in the 1990s. Females and males were equally likely to have come from an agricultural background before entering the California Polytechnic State University Agribusiness Department. However, females were less likely to be employed in the agriculture sector after graduation.

The difference in current salary can be explained by the positions achieved by the graduates. Over 60% of female graduates from the 1990s occupy staff positions, lower management, and middle management; while almost 70% of males achieve positions in the higher paying positions of middle management, upper management, and proprietors. Further, differences are observed in the salaries attained by males and females in the same position. Since both male and female graduates of the 1990s have over a quarter of respondents in the middle management position, their salaries for the same position were compared: 25.5% of males in middle management positions earn $40,000-49,999 and 27.7% of females in middle management earn $30,000-39,999.

For graduates of the 1990s, it was found that females earn less than males that are employed within the same type of business. Both males and females have a large percentage in the employment of marketing farm products; therefore, their salaries were compared. Of the 20.6% of females employed to market farm products, 7.4% of them earn over $60,000 per year. Of the 24.9% of males employed in the marketing of farm products, 25.7% earn over $60,000 per year.

The findings of this study indicate that although males and females earn the same level of education at the same institution, Cal Poly, their employment opportunities after graduation are significantly different. There appears to be a gender bias in starting salary, current salary, and the level of employment that females can achieve. These results are similar to the findings of Jo Anne Preston in her 1999 article, "Occupational Gender Segregation Trends and Explanations," published in *The Quarterly Review of Economics and Finance.* Preston found that although women are obtaining a higher education level, and increasingly entering the job market, they are still not equally represented in many professions. In Preston's article, occupational gender segregation was discussed, and the results found that the job market is segregated by sex. Women tend to work in occupations that comprise many other women, while men have occupations that are predominantly male.

These findings also agree with the findings of Nafis Sadi in the 1998 article, "Women, Work, and Society: A Global View" in the *New Perspective Quarterly.* Sadi found that women earn less than males in the workplace, with a gap, on average, of 30-40 percent. Sadis further indicates that the much discussed "glass ceiling" remains a continuous challenge for working women. The "glass ceiling" appears to exist for female graduates of the Cal Poly's Agribusiness Department, since they tend to achieve lower positions than their male counterparts and earn lower salaries.

Bibliography

Oshita, Stephen Jack. A Review and Synthesis of Present Status of Women in Agriculture. Unpublished Senior Project, California Polytechnic State University, 1982.

Scaroni, Linda. A study of the Opportunities for Women in Agriculture. Unpublished Senior Project, California Polytechnic State University, 1988.

Rosenfeld, Rachel. Farm Women: Work, Farm, and Family in the US. Chapel Hill: University North Carolina Press, 1985.

Rickson, Sarah T. "Outstanding in their Field: Women in Agriculture." *Current Sociology* 45(April 1997): 91-133

"Survey of Agribusiness Graduates." California Polytechnic State University Agribusiness Department: California Polytechnic State University, 1998.

U.S. Bureau of Census. We the American Women. Washington: Age and Statistics Branch, Populations Division, 1990.

Preston, Jo Anne. "Occupational Gender Segregation Trends and Explanations." *The Quarterly Review of Economics and Finance* 39(December 1999): 611-624

Weber, Joseph A. and Miller, Mary G. "Factors Related to College Women's Perception of Employment." *Home Economics Research Journal* 13 (December 1984): 159-166

Katz, Marnie. "Conference Explores the Changing Role of Women Agricultural Leaders." Ag Alert. (May 3, 2000)

Hersch, Joni and Viscusi, Kip W. "Gender Differences in Promotions and Wages." *Industrial Relations* 35 (October 1996): 461-471

Sadik, Nafis. "Women, Work, and Society: A Global View" New *Perspective Quarterly*

Preston, Jo Anne. "Occupational Gender Segregation Trends and Explanations." *The Quarterly Review of Economics and Finance* 39 (December 1999): 611-624

Weber, Joseph A. and Miller, Mary G. "Factors Related to College Women's Perception of Employment." *Home Economics Research Journal* 13(December 1984): 159-166

Katz, Marnie. "Conference Explores the Changing Role of Women Agricultural Leaders." Ag Alert. (May 3, 2000)

Hersch, Joni and Viscusi, Kip W. "Gender Differences in Promotions and Wages." *Industrial Relations* 35 (October 1996): 461-471

Sadik, Nafis. "Women, Work, and Society: A Global View" *New Perspective Quarterly* 15 (Summer 1998): 39-42

Table 1. All employed Cal Poly Graduates 1950s–1990s

	Female	Male	Chi Square
Highest Degree Earned			
BS/BA	83.9%	86.6%	
MBA	4.3%	4.7%	
MS/MA	7.2%	5.2%	
JD/LLM/LLB	1.4%	1.7%	
PhD/Ed.D	0.0%	0.6%	
Other	3.2%	0.9%	11.602
Job Relation to Major			
Ag Sector	39.3%	49.3%	
Utilizes Major's tools/skills	31.1%	33.3%	
Non Ag Related	29.6%	17.4%	**19.523****
Current Position			
Proprietor	14.6%	32.7%	
Upper Management/Executive	16.4%	23.2%	
Middle Management	26.3%	25.1%	
Lower Management	11.7%	6.1%	
Staff	17.4%	6.2%	
Entry Level	2.1%	1.4%	
Other	11.4%	5.2%	**78.48****
Starting Salary			
< $9,999	10.7%	19.9%	

$10,000-14,999	14.6%	20.5%	
$15,000-19,999	23.1%	18.6%	
$20,000-24,999	28.5%	18.7%	
$25,000-29,999	13.5%	11.6%	
$30,000-34,999	6.0%	6.0%	
$35,000-39,999	2.1%	2.4%	
$40,000 plus	1.4%	2.3%	**26.7****
Current Salary			
< $19,000	9.0%	2.3%	
$20,000-29,000	16.1%	4.1%	
$30,000-39,000	27.2%	11.0%	
$40,000-49,000	16.8%	13.3%	
$50,000-59,000	13.6%	15.4%	
$60,000-69,000	7.9%	11.7%	
$70,000-99,999	3.9%	20.2%	
$100,000 plus	5.4%	22.0%	**170.3****
Type of Business Where Employed			
Ag: Finance/Banking/Appraisal /Accounting/Land Brokerage	8.2%	9.9%	
Farm input-processing, manufacturing, wholesale	2.9%	8.4%	
Marketing Farm Products	16.4%	17.8%	
Ag Production	11.8%	22.1%	

Ag Government Agency	3.2%	1.9%	
Ag Education	1.8%	2.2%	
Non-Ag Finance or Accounting	8.9%	3.4%	
Non-Ag Marketing or sales	12.9%	7.5%	
Production, manufacturing	1.1%	2.8%	
Service Business	6.8%	6.0%	
Non-Ag Education	7.5%	1.7%	
Other	18.6%	16.3%	**68.1****
Location of Business			
Domestically	53.40%	55.50%	
Internationally	3%	3.70%	
Both	43.60%	40.70%	0.823

*** significance at .10 Level**

**** significance at .05 Level**

Table 2. All Graduates: 1950–1990s Current Salary and Type of Employment (Agriculture)

CHI SQUARE 129.49**

	Ag Finance/ Banking/ Appraisal Accounting Land brokerage	Farm Input Processing Mnfcturing Wholesale	Marketing Farm Products Processing Mnfcturing Wholesale Retail	Ag Production	Ag Gov't Agency	Ag. Educ.
<$19,000	1.0%	4.1%	0.5%	4.4%	4.2%	4.5%
$20,000-29,999	3.0%	1.4%	9.2%	7.4%	16.7%	4.5%
$30,000-39,999	12.0%	9.5%	12.0%	18.2%	25.0%	9.1%
$40,000-49,999	14.0%	9.5%	17.9%	15.8%	16.7%	18.2%
$59,000-59,999	22.0%	16.2%	12.5%	7.9%	20.8%	31.8%
$60,000-69,999	12.0%	10.8%	12.5%	10.3%	16.7%	22.7%
$70,000-99,999	22.0%	25.7%	12.0%	17.7%	0.0%	9.1%
$100,000 plus	14.0%	23.0%	23.4%	18.2%	0.0%	0.0%

* **Significance at .10 level**

** **Significance at .05 level**

Table 3. All Graduates: 1950-1990s Current Salary Range and Current Position

	Pro-prietor	Upper Mgmt. Executive	Middle Mgmt.	Lower Mgmt.	Staff	Entry Level	Other
<$19,000	4.1%	1.3%	2.4%	4.6%	14.5%	23.8%	14.5%
$20,000-29,999	3.0%	5.7%	4.2%	16.1%	20.0%	23.8%	7.9%
$30,000-39,999	10.8%	7.9%	16.7%	23.0%	30.0%	33.3%	22.4%
$40,000-49,999	11.1%	9.2%	18.5%	27.6%	19.1%	14.3%	9.2%
$50,000-59,999	9.1%	13.1%	23.7%	12.6%	11.8%	0.0%	18.4%
$60,000-69,999	8.1%	11.4%	13.6%	9.2%	2.7%	0.0%	13.2%
$70,000-99,999	19.6%	24.5%	15.0%	5.7%	1.8%	0.0%	7.9%
$100,000 plus	34.1%	27.1%	5.9%	1.1%	0.0%	4.8%	6.6%

Table 4. Graduates employed in the Decade of 1990's

	Female	Male	Chi Square
Highest Degree			
Earned			
BS/BA	86.7%	93.7%	
MBA	5.2%	2.3%	
MS/MA	5.9%	1.7%	
JD/LLM/LLB	1.5%	1.7%	
Other	1%	0.6%	6.09
Job Relation to			
Major			
Ag Sector	41.2%	46.2%	
Utilizes Major's tools/skills	30.9%	34.3%	
Non Ag Related	27.9%	19.5%	2.99
Current Position			
Proprietor	2.9%	17.2%	
Upper Management/Executive	15.4%	19.5%	
Middle Management	28.7%	32.0%	
Lower Management	16.2%	8.3%	
Staff	19.1%	8.9%	
Entry Level	4.4%	4.7%	
Other	13.2%	9.5%	**25.89****
Starting Salary			

< $9,999	5.1%	1.7%	
$10,000-14,999	7.4%	2.9%	
$15,000-19,999	13.2%	7.4%	
$20,000-24,999	33.1%	32.0%	
$25,000-29,999	23.5%	28.6%	
$30,000-34,999	11.8%	15.4%	
$35,000-39,999	2.9%	7.4%	
$40,000 plus	2.9%	4.6%	**13.46***
Current Salary			
< $19,999	8.9%	3.4%	
$20,000-29,999	22.2%	11.4%	
$30,000-39,999	34.1%	25.7%	
$40,000-49,999	14.8%	17.1%	
$50,000-59,999	11.9%	16.6%	
$60,000-69,999	5.9%	10.3%	
$70,000-99,999	1.5%	6.3%	
$100,000 plus	0.7%	9.1%	**28.39****
Type of Business			
Where Employed			
Ag: Finance/Banking/Appraisal/ Accounting/Land Brokerage	6.6%	3.5%	
Farm input-processing, manufacturing, wholesale	4.4%	5.2%	

Marketing Farm Products	20.6%	24.9%	
Ag Production	8.8%	20.8%	
Ag Government Agency	2.9%	1.7%	
Ag Education	2.2%	0.6%	
Non-Ag Finance or Accounting	8.8%	4.6%	
Non-Ag Marketing or sales	17.6%	12.1%	
Production, manufacturing	0.7%	4.0%	
Service Business	5.9%	6.4%	
Non-Ag Education	5.1%	0.6%	
Other	16.2%	15.6%	**24.42****
Location of Business			
Domestically	39.8%	45.4%	
Internationally	2.3%	5.7%	
Both	57.8%	48.9%	3.639

*** Significance at .10 Level**

**** Significance at .05 Level**

Table 5. All Graduates in the decade of the 1990s Current Salary and Type of Employment (Agriculture)

CHI SQUARE 106.47**

	Ag Finance/ Banking/ Appraisal Accounting Land brokerage	Farm Input Processing Mnfcturing Wholesale	Marketing Farm Products Processing Mnfcturing Wholesale Retail	Ag Production	Ag Gov't Agency	Ag. Educ.
<$19,000	6.7%	6.7%	1.4%	6.3%	0.0%	0.0%
$20,000-29,999	13.3%	6.7%	16.9%	18.8%	57.1%	25.0%
$30,000-39,999	46.7%	26.7%	22.5%	39.6%	14.3%	25.0%
$40,000-49,999	0.0%	26.7%	25.4%	14.6%	14.3%	50.0%
$50,000-59,999	20.0%	13.3%	11.3%	8.3%	14.3%	0.0%
$60,000-69,999	13.3%	13.3%	8.5%	8.3%	0.0%	0.0%
$70,000-99,999	0.0%	6.7%	5.6%	0.0%	0.0%	0.0%
$100,000 plus	0.0%	0.0%	8.5%	4.2%	0.0%	0.0%

**** Significance at .05 level**

Table 5a. All Graduates in the Decade of the 1990s Current Salary and Type of Employment (non-Agriculture)

CHI SQUARE 106.47**

	Non-Ag Finance or Accounting	Non-Ag Marketing or Sales	Non-Ag Production, Manufact-uring, Construction	Service Business	Non-Ag Education
<$19,000	5.0%	2.2%	12.5%	5.3%	12.5%
$20,000-29,999	15.0%	15.6%	0.0%	15.8%	25.0%
$30,000-39,999	35.0%	28.9%	0.0%	36.8%	50.0%
$40,000-49,999	30.0%	2.2%	12.5%	0.0%	12.5%
$50,000-59,999	15.0%	22.2%	50.0%	21.1%	0.0%
$60,000-69,999	0.0%	22.2%	0.0%	5.3%	0.0%
$70,000-99,999	0.0%	4.4%	12.5%	0.0%	0.0%
$100,000 plus	0.0%	2.2%	12.5%	15.8%	0.0%

**** Significance at .05 level**

Table 6. Decade of 1990s Female Graduates Current Salary and Type of Employment

CHI SQUARE 68.84

	Ag Finance/ Banking/ Appraisal Accounting Land brokerage	Farm Input Processing Manufacturing Wholesale	Marketing Farm Products Processing Manufacturing Wholesale Retail	Ag Production	Ag Gov't. Agency	Ag. Educ.
<$19,000	11.1%	16.7%	3.7%	25.0%	0.0%	33.3%
$20,000-29,999	22.2%	16.7%	37.0%	25.0%	50.0%	33.3%
$30,000-39,999	66.7%	16.7%	22.2%	33.3%	25.0%	33.3%
$40,000-49,999	0.0%	33.3%	18.5%	8.3%	25.0%	0.0%
$50,000-59,999	0.0%	16.7%	11.1%	0.0%	0.0%	0.0%
$60,000-69,999	0.0%	0.0%	7.4%	8.3%	0.0%	0.0%
$70,000-99,999	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
$100,000 plus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 6a. Female Graduates in the Decade of the 1990s Current Salary and Type of Employment (non-Agriculture)

CHI SQUARE 68.84

	Non-Ag Finance or Accounting	Non-Ag Marketing or Sales	Non-Ag Production, Manufact-uring, Construction	Service Business	Non-Ag Education
<$19,000	8.3%	0.0%	100.0%	12.5%	0.0%
$20,000-29,999	8.3%	12.5%	0.0%	25.0%	28.6%
$30,000-39,999	50.0%	41.7%	0.0%	25.0%	57.1%
$40,000-49,999	33.3%	4.2%	0.0%	0.0%	14.3%
$50,000-59,999	0.0%	20.8%	0.0%	25.0%	0.0%
$60,000-69,999	0.0%	12.5%	0.0%	12.5%	0.0%
$70,000-99,999	0.0%	4.2%	0.0%	0.0%	0.0%
$100,000 plus	0.0%	4.2%	0.0%	0.0%	0.0%

Table 7. Decade of 1990s Male Graduates Current Salary and Type of Employment

CHI SQUARE 144.79**

	Ag Finance/ Banking/ Appraisal Accounting Land brokerage	Farm Input Processing Manufacturing Wholesale	Marketing Farm Products Processing Manufacturing Wholesale Retail	Ag Production	Ag Gov't. Agency	Ag. Educ.
<$19,000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
$20,000-29,999	0.0%	0.0%	4.7%	16.7%	66.7%	0.0%
$30,000-39,999	16.7%	33.3%	20.9%	41.7%	0.0%	0.0%
$40,000-49,999	0.0%	22.2%	30.2%	16.7%	0.0%	100.0%
$50,000-59,999	50.0%	11.1%	11.6%	11.1%	33.3%	0.0%
$60,000-69,999	33.3%	22.2%	9.3%	8.3%	0.0%	0.0%
$70,000-99,999	0.0%	11.1%	9.3%	0.0%	0.0%	0.0%
$100,000 plus	0.0%	0.0%	14.0%	5.6%	0.0%	0.0%

** **Significant at .05 level**

Table 7a. Decade of 1990s Male Graduates Current Salary and Type of Employment

CHI SQUARE 144.79**

	Ag Finance/ Banking/ Appraisal Accounting Land brokerage	Farm Input Processing Manufacturing Wholesale	Marketing Farm Products Processing Manufacturing Wholesale Retail	Ag Production	Ag Gov't. Agency	Ag. Educ.
<$19,000	0.0%	4.8%	0.0%	0.0%	100.0%	
$20,000-29,999	25.0%	19.0%	0.0%	9.1%	0.0%	
$30,000-39,999	12.5%	14.3%	0.0%	45.5%	0.0%	
$40,000-49,999	25.0%	0.0%	14.3%	0.0%	0.0%	
$50,000-59,999	37.5%	23.8%	57.1%	18.2%	0.0%	
$60,000-69,999	0.0%	33.3%	0.0%	0.0%	0.0%	
$70,000-99,999	0.0%	4.8%	14.3%	0.0%	0.0%	
$100,000 plus	0.0%	0.0%	14.3%	27.3%	0.0%	

** **Significant at .05 level**

Table 8. **1990 Total Graduates: Current Salary and Position**

CHI-SQUARE 102.55**

	Proprietor	Upper Mgmt. Executive	Middle. Mgmt.	Lower. Mgmt.	Staff	Entry Level	Other
<$19,000	8.6%	3.7%	6.4%	2.7%	14.9%	22.2%	16.7%
$20,000-29,999	8.6%	14.8%	7.4%	27.0%	29.8%	27.8%	11.1%
$30,000-39,999	20.0%	20.4%	27.7%	32.4%	36.2%	38.9%	33.3%
$40,000-49,999	14.3%	11.1%	21.3%	24.3%	8.5%	11.1%	8.3%
$50,000-59,999	14.3%	22.2%	17.0%	10.8%	6.4%	0.0%	13.9%
$60,000-69,999	2.9%	14.8%	12.8%	2.7%	4.3%	0.0%	5.6%
$70,000-99,999	5.7%	9.3%	4.3%	0.0%	0.0%	0.0%	5.6%
$100,000 plus	25.7%	3.7%	3.2%	0.0%	0.0%	0.0%	5.6%

** **Significant at .05 level**

Table 9. **1990 Female Graduates: Current Salary and Position**

CHI-SQUARE 43.82

	Proprietor	Upper Mgmt. Executive	Middle. Mgmt.	Lower. Mgmt.	Staff	Entry Level	Other
<$19,000	33.3%	9.5%	12.8%	0.0%	19.4%	0.0%	15%
$20,000-29,999	33.3%	19.0%	10.3%	30.4%	35.5%	16.7%	15%
$30,000-39,999	16.7%	23.8%	33.3%	39.1%	29.0%	66.7%	40%
$40,000-49,999	16.7%	9.5%	15.4%	17.4%	9.7%	16.7%	15.0%
$50,000-59,999	0.0%	19.0%	20.5%	8.7%	3.2%	0.0%	5.0%
$60,000-69,999	0.0%	14.3%	7.7%	4.3%	3.2%	0.0%	0%
$70,000-99,999	0.0%	4.8%	0.0%	0.0%	0.0%	0.0%	5.0%
$100,000 plus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%

Table 10. Male Graduates: Current Position and Salary

Chi-Square 88.36**

	Proprietor	Upper Mgmt. Exec.	Middle Mgmt.	Lower Mgmt.	Staff	Entry Level	Other
<$19,000	3.4%	0.0%	1.8%	7.1%	6.3%	36.4%	18.8%
$20,000-29,999	3.4%	12.1%	5.5%	21.4%	18.8%	36.4%	6.3%
$30,000-39,999	20.7%	18.2%	23.6%	21.4%	50.0%	18.2%	25.0%
$40,000-49,999	13.8%	12.1%	25.5%	35.7%	6.3%	9.1%	0.0%
$50,000-59,999	17.2%	24.2%	14.5%	14.3%	12.5%	0.0%	25.0%
$60,000-69,999	3.4%	15.2%	16.4%	0.0%	6.3%	0.0%	12.5%
$70,000-99,999	6.9%	12.1%	7.3%	0.0%	0.0%	0.0%	6.3%
$100,000 plus	31.0%	6.1%	5.5%	0.0%	0.0%	0.0%	6.3%

** **Significant at .05 level**

Table 11. Experience Prior to Cal Poly

Experience	Female	Male	Chi Square
Raised/Grew up on farm or ranch	42.1%	48.7%	21.16**
No Ranch/Farm Experience	27.8%	33.1%	
No Farm/Ranch Experience	30.1%	18.2%	

**** Significant at the .05 level**

Table 12. Employment Sector After Graduation

Sector of Employment	Female	Male	Chi Square
Agriculture	43.9%	62.0%	31.26**
Non-Agriculture	56.1%	38.0%	

**** Significant at the .05 level**

Table 13. Current Salary by Employment Sector

Current Salary	Agriculture Sector	Non-Agriculture	Chi Square
Less than $19,999	3.3%	7.6%	15.99**
$20,000 - 29,999	7.4%	7.6%	
$30,000 - 39,999	14.8%	17.4%	
$40,000 - 49,999	15.1%	13.7%	
$50,000 - 59,999	14.2%	15.2%	
$60,000 - 69,999	11.7%	8.0%	
$70,000 - 99,999	16.1%	14.3%	
$100,000 and over	17.5%	16.2%	

**** Significant at the .05 level**

Table 14. Experience Prior to Cal Poly—1990s Graduates

Experience	Female	Male	Chi Square
Raised/Grew up on farm or ranch	41.1%	42.3%	2.744
No Ranch/Farm Experience	21.2%	27.5%	
No Farm/Ranch Experience	37.7%	30.2%	

Table 15. Employment Sector After Graduation—1990s Graduates

Sector of Employment	Female	Male	Chi Square
Agriculture	43.3%	55.8%	5.1**
Non-Agriculture	56.7%	44.2%	

**** Significant at the .05 level**

Table 16. Current Salary by Employment Sector—1990s Graduates

Current Salary	Agriculture Sector	Non-Agriculture	Chi Square
Less than $19,999	6.0%	11.8%	11.89
$20,000 - 29,999	18.7%	12.4%	
$30,000 - 39,999	28.9%	29.2%	
$40,000 - 49,999	19.3%	11.2%	
$50,000 - 59,999	10.8%	16.8%	
$60,000 - 69,999	8.4%	7.5%	
$70,000 - 99,999	3.0%	5.0%	
$100,000 and over	4.8%	6.2%	

Table 17. Mean Ratings of Skills Needed for Success

Skill	Total Sample	1990 Graduates
Somewhat to very important		
Communication skills (writing, speaking, listening)	4.7	4.7
Interpersonal skills- positive work attitudes, working in groups, self motivation	4.5	4.5
Ethical and Moral standards	4.4	4.2
Managerial-developing business goals and objectives, coordinating human and physical resources, etc.	4.2	4.2
Computing and quantitative skills	4.2	4.2
Somewhat important		
Marketing and professional selling skills	3.9	3.9
Accounting/financial/economic problem solving	3.9	3.8
Slightly to somewhat important		
Internet, World Wide Web, e-mail	3.5	3.7
Technical agricultural knowledge including processing and distribution	3.4	3.4
Management Information Systems (MIS)	3.4	3.4

Table 18. Mean Ratings of Skills Needed for Success

Total Sample

Skill	**Females (N=324)**	**Males (N=789)**	**t-statistic**
Somewhat to very important			
Communication skills (writing, speaking, listening)	4.7	4.6	3.1**
Interpersonal skills- positive work attitudes, working in groups, self motivation	4.6	4.5	1.8*
Ethical and Moral standards	4.4	4.4	0.7
Managerial-developing business goals and objectives, coordinating human and physical resources, etc.	4.2	4.2	1.1
Computing and quantitative skills	4.2	4.1	1.8*
Somewhat important			
Marketing and professional selling skills	3.9	3.9	0.6
Accounting/financial/economic problem solving	3.9	3.9	0.6
Slightly to somewhat important			
Internet, World Wide Web, e-mail	3.8	3.3	7.2**
Technical agricultural knowledge including processing and distribution	3.4	3.4	0.7
Management Information Systems (MIS)	3.5	3.3	3.7**

* **significant at the .01 level**

** **significant at the .05 level**

Table 19. Mean Ratings of Skills Needed for Success—1990 Graduates

Skill	Female (N=147)	Male (N=180)	t-statistic
Somewhat to very important			
Communication skills (writing, speaking, listening)	4.7	4.6	1.1
Interpersonal skills- positive work attitudes, working in groups, self motivation	4.6	4.5	1.1
Ethical and Moral standards	4.3	4.1	2.6**
Managerial-developing business goals and objectives, coordinating human and physical resources, etc.	4.2	4.2	0.3
Computing and quantitative skills	4.2	4.1	0.5
Somewhat important			
Marketing and professional selling skills	3.9	4.0	0.2
Accounting/financial/economic problem solving	3.9	3.9	0.6
Slightly to somewhat important			
Internet, World Wide Web, e-mail	3.9	3.5	3.3**
Technical agricultural knowledge including processing and distribution	3.5	3.4	0.5
Management Information Systems (MIS)	3.6	3.3	2.0**

*** significant at the .10 level**

**** significant at the .05 level**

Table 20. Position by Gender Total Graduates

Position	Female (N=295)	Male (N=755)	Chi-Square
Proprietor/upper management, and	33.2%	58.1%	65.5**
Middle and lower management	44.1%	33.1%	
Staff/entry level	22.7%	8.7%	

**** significant at the .05 level**

Table 21. Position by Gender 1990s Graduates

Position	Female (N=129)	Male (N=159)	Chi-Square
Proprietor/upper management, and	21.7%	39.0%	12.1**
Middle and lower management	48.8%	44.0%	
Staff/entry level	29.5%	17.0%	

**** significant at the .05 level**

Table 22. Mean Ratings of Skills Needed for Success

Total Graduates by Level

Skill	**Upper**	**Middle/Lower**	**Staff/Entry**	**F- Statistic**
Somewhat to very important				
Ethical and Moral standards	4.5	4.3	4.3	3.9**
Managerial-developing business goals and objectives, coordinating human and physical resources, etc.	4.3	4.1	3.9	13.5**
Slightly to somewhat important				
Internet, World Wide Web, e-mail	3.3	3.4	3.6	3.7**

*** significant at the .01 level**

**** significant at the .05 level**

Table 23. Post Hoc Test Mean Ratings of Skills Needed for Success

Total Graduates by Level

Ethical and Moral Standards		**Mean Difference**
Upper	Middle	-.3632
	Entry	-.5500**
Middle	Upper	.3632
	Entry	-.1868
Lower	Upper	.5500**
	Middle	.1868
Managerial		**Mean Difference**
Upper	Middle	0.16**
	Lower	0.33**
Middle	Upper	-0.16**
	Lower	.18**
Lower	Upper	-0.33**
	Middle	-0.18
Internet, World Wide Web, e-mail		**Mean Difference**
Upper		
	Middle	-0.11
	Lower	-0.24**
Middle	Upper	0.11

	Lower	-0.13
Lower	Upper	.24**
	Middle	0.13

*** significant at the .10 level**

**** significant at the .05 level**