

WHO GETS PAID MORE? DETERMINANTS OF SALARY IN A LOWER  
REVENUE GENERATING NCAA DIVISION 1 SPORT

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WHO GETS PAID MORE? DETERMINANTS OF SALARY IN A LOWER  
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**Abstract**

This paper examines pay discrimination in relation to female swimming and diving coaches a part of the NCAA (National Collegiate Athletic Association) Division I conference. To evaluate pay discrimination, this paper assesses the impact of various determinants on annual base salary of coaches in the lower revenue generating sport of swimming and diving. This study analyzes data from the 2016 Salary Survey by CSCCA (College Swimming & Diving Coaches Association of America) using an ordinary least squares regression model. It is worth noting that the salaries of coaches in lower revenue generating sports, specifically at institutions with NCAA Division I affiliated men's football and basketball programs, are being subsidized due to increased earnings. These results suggest that gender is a significant predictor of a coach's annual base salary. This study also finds autonomy structure, years of experience, and NCAA Division I to be significant determinants of a head coach's annual base salary.

KEYWORDS: (NCAA, Swimming & Diving, Salary, Discrimination)

JEL CODES: (J44, J71, Z20, Z21, Z22)

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*Thank you to everyone who helped me throughout this process. Mom and Dad, if not for you I would not be at Colorado College pursuing my passions. Professor Aju Fenn, your support and encouragement motivated me every day. Anne Goodman James, thank you for inspiring me. Greg Earhart, thank you for providing me with raw data to further the salary debate. Friends and sisters, thank you for being amazing and supportive.*

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## **Introduction**

Forty years after the enactment of Title IX, a new generation of women have the qualifications to be head coaches. In 1971, 90% of female sports teams were coach by women (Acosta and Carpenter, 2014). Today, 43% of female sports are coached by women. Of all collegiate athletic teams, only 23% are coached by women (Acosta and Carpenter, 2014). No matter the sport, institution or level of competition, female coaches face multiple barriers and biases, including individual, interpersonal, monetary, organizational and societal discrimination (LaVoi, 2016). The NCAA has expressed concerns about the opportunities for women in intercollegiate head coaching. The visibility, value, and gender stereotypes placed on collegiate sports in the United States may be more problematic than previously stated (Knoppers, 1987).

Discrepancies in NCAA coaches' salaries have become widely publicized, suggesting the possibility of gender pay discrimination (Brooke and Foster 2010). Anybody can see the considerable pay-gap within the collegiate coaching industry. Football and men's basketball coaches at NCAA Division I institutions, particularly those a part of the power five conferences, are paid upwards of a million dollars annually. Institutions and researchers argue the pay-gap is a "taste for discrimination" in collegiate athletics stemming from differing revenue streams, consumers, and athletic departments (Becker 1957; Brook & Foster 2010).

Previous studies have focused on the gender pay-gap between men's and women's basketball coaches, but minimal research has explored the pay gap within lower revenue generating sports. If variation of annual base salary in higher revenue producing

sports can be attributed to differing revenue streams, the salary difference between male and female coaches in lower revenue generating sports must be attributed towards another factor. This study examines a specific sport, swimming and diving, in determining the individual factors affecting the annual base salary of a coach.

## Literature Review

Title IX of the Educational Amendments of 1972 mandated equality between men's and women's intercollegiate sports (Welch and Sigelman, 2007). This federal civil rights statute prohibits discrimination in gender pertaining to educational programs, including athletics, which receive or benefit from Federal funding (Lattinville and Denny, 2017). The NCAA saw a massive growth in female athletic participation with the enactment of Title IX. However, leadership positions such as coaches, athletic directors, and officials, that were previously held by women, are becoming more frequently occupied by men. Research shows that there has yet to be an equivalent increase in the representation of female leaders in men's athletics (Welch & Sigelman, 2007; Kamphoff & Gill, 2008; Pastore & Maeacci 2004; Acosta & Carpenter, 2000). This paper will improve upon past studies of occupational gender stratification by examining swimming and diving, a sport that draws smaller audiences and generates less revenue. This study will examine if the individual and institutional characteristics of a coach have an impact on annual base salary.

Title IX declares that:

“No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance (Office for Civil Rights, 1979).”

The Policy Interpretation of Title IX states that institutions receiving or benefiting from Federal aid must provide equal opportunity to all students regardless of gender (Hogshead-Makar and Zimbalist, 2007). An important element of this requirement is the assignment and compensation of qualified coaches. Title IX requires comparable coaching resources for all student-athletes but does not address insuring equal salaries for



coaches of female and male athletic teams (Shaw, 2015). Factors like professional qualifications, experience, nature of coaching duties, and working conditions may justify the differences coaches receive in compensation and salary. However, a violation of Title IX will occur when the compensation or practices of the institution deny male and female athletes equivalent quality of coaching (Hogshead-Makar and Zimbalist, 2007). Unique situations exist where a particular coach has an extremely high winning percentage and an abnormally high salary is justifiable. Institutions claim the discrepancy of pay for coaches of female sports teams is due to greater revenue production and additional duties performed by the coaches of the equivalent male sport's teams (Shaw, 2015). NCAA institutions have been accused of gender compensation discrimination in the past, but equitable salaries and compensation amongst coaches is necessary to retaining women in head coaching positions.

Title IX was effective in mandating each institution to have a female senior administrator. The female senior administrator is the highest-ranking female in the athletic department and her purpose is to enhance female representation and promote female administrators in the decision-making process (Morrison, 2011). This has been effective in increasing female participation in collegiate athletic programs, but has not been effective in remedying the gender gap of collegiate coaches. Research on occupational gender stratification has focused on the movement of women into previously male-dominated occupations (Welch and Sigelman, 2007). Occupational gender stratification holds for the coaching profession, just as historically women have been assigned to less prestigious roles in the workplace (Welch and Sigelman, 2007). Studies regarding gender movement in the workplace happen when the labor supply is

short, increased knowledge of women's productivity, and hiring patterns at the top of organizations create less tolerance for gender discrimination (Welch and Sigelman, 2007). The role of women in the workplace is dynamic, but simply "adding more women" in the coaching profession is only one part of the solution (LaVoi, 2016).

Society's perception of a head coach is often associated with the stereotypical aggressive, competitive, and masculine behaviors (Hosbrook, 1988; Wrisberg, 1990). Kamphoff and Gill's (2008) study found that gender and racial differences, and the perceptions associated with those barriers, have deterred women from entering the coaching profession. This absence means that fewer women will consider coaching as a career, and even less will continue their sports involvement once their collegiate eligibility is over. Welch and Sigelman's (2007) analysis finds NCAA Division I institutions that have more resources available are hiring a disproportionate share of available female coaches. These athletic programs generate more revenue, offer full scholarships, and provide advancement into careers in the professional sports industry. They are also more inclusive of female head coaches. Retaining women in head coaching positions is crucial to creating a gender-balanced coaching profession.

Brooke and Foster (2010) argue that the coaching pay-gap stems from differing revenue streams and not from gender discrepancies in the labor market. When the base salaries of men's and women's basketball coaches are compared, there is no statistically significant difference between their annual base earnings. However, when contracts, T.V. deals, and compensation are accounted for, women's head basketball coaches earn about half the total compensation of their male counterparts (Humphreys, 2000). Humphreys

(2000) believes the earnings gap can be attributed to the prestige and popularity associated with men's basketball, the larger revenue stream, and the "taste for discrimination" by athletic directors and consumers. This study simply reflects that lucrative, prestigious and popular athletic programs influence the base salaries of a head coach.

The salary of a head coach may also be impacted by institutional characteristics like conference and division of the athletic program. A new phenomenon has taken place in the past three years at lucrative NCAA Division I schools. Coaches of lower revenue generating sports are experiencing continually increasing salaries. The increases in salaries have been largely subsidized by lucrative football and men's basketball programs. This could be explained by a hypothesized trickle-down effect of higher revenue generating sports subsidizing athletic programs that generate minimal revenue (Hobson, 2017).

In August 2014, the NCAA Division I conference adopted a new structure called autonomy. The model of autonomy consists of 65 institutions in the five highest-resource conferences; Atlantic Coast Conference (ACC), Pac-12 Conference (PAC-12), Big Ten Conference (BIG), Big 12 Conference (BIG-12), Southeastern Conference (SEC). These power conferences are able to vote on rule changes within the group to promote student-athlete wellbeing (Hosick, 2014). This new legislation also grants these institutions more individualized decision-making power and allows individual schools to generate more revenue from NCAA DI football programs. The extra revenue generated may subsidize the annual base salaries of the coaches of lower revenue generating sports (Hobson,

2017). Therefore, the autonomy structure of NCAA Division I institutions may boost the annual base salary of a coach, in a sport such as swimming and diving.

Welch and Sigelman (2007) suggest that if discrimination is present there should be a cluster of female head coaches found in less prestigious sports. However, swimming and diving, a sport that generates little revenue and is deemed less prestigious compared to basketball and football, has one of the smallest percentages of female head coaches (Acosta and Carpenter, 2014). This study will focus on a specific lower revenue generating sport, swimming and diving, in determining the individual factors affecting the annual base salary of a coach.

## Theory

Employers of head coaches, athletic departments and institutions, will maximize a profit function that leads to the input demand function. The input demand function depends on  $L$ , the coach's characteristics, and  $K$ , the institutional characteristics. The function is shown in equation (6).

$$Q = f(L, K). \quad (1)$$

where  $Q = f(L, K)$  is the production function of wins or a successful season.  $K$ , includes variables relating to the institution, and  $L$  is a variable defined by the characteristics of the coach. The employer of coaches will then hire a specific number of employees to maximize the firm's or institution's profit. The associated first order condition with respect to  $L$ , is given by equation (4).

$$\pi = P(Q) * Q - C(Q) \quad (2)$$

$$\max \pi_{L,K} = P(f(L, K)) * f(L, K) - wL - rK \quad (3)$$

$$\frac{\partial \pi}{\partial L} = P(f(L, K)) * \frac{\partial f(L, K)}{\partial L} + \frac{\partial P * f(L, K)}{\partial f(L, K)} * \frac{\partial f(L, K)}{\partial L} - w = 0 \quad (4)$$

$$\frac{\partial f(L, K)}{\partial L} \left[ P(f(L, K)) + f(L, K) * \frac{\partial P}{\partial f(L, K)} \right] = w \quad (5)$$

$$\frac{\partial Q}{\partial L} \left[ P(Q) + Q * \frac{\partial P}{\partial Q} \right] = w \quad (6)$$

$$MP_L * MR = w \quad (7)$$

$$MRP_L = w \quad (8)$$

The reorganization of (4) yields the intuitive result that an employer who maximizes profit will hire,  $L$ , until the point where wage equals the marginal revenue of product labor.

Employers of head coaches operate like a monopoly in the output market. They will hire a coach until the marginal revenue of product labor is equal to the wage. The theoretical example of equation (8) can be expressed as an empirical equation (9).

$$\log(w_{ij}) = \beta_0 + \beta_1 K_i + \beta_2 L_j + \varepsilon_{ij} \quad (9)$$

where wage,  $w$ , depends on the characteristics of the coach and institutional factors. The function can be manipulated to take a closer examination of athletic programs that draw smaller audiences and generate less revenue. Humphreys (2000) applied this empirical model to estimate if there is an earnings gap between male and female NCAA Division I basketball coaches. Brook and Foster (2010) also applied this model to find the impact of gender on compensation amongst male and female NCAA basketball coaches.

This study will apply Mincer's Earnings Equation (1974), a method for controlling differentials in earnings, to examine if gender based salary discrimination and autonomy affects the annual base salary earnings of a swimming and diving coach.

## Data & Methodology

The cross-sectional data used in this study includes swimming and diving coaches' annual base salaries, NCAA Division and conference, years of experience, and educational attainment. Data are compiled from College Swimming Coaches Association of America (CSCAA) continuous 2016 salary survey and have been anonymized to protect coaches' personal identifiable information.

In order to determine if NCAA Division I swimming and diving coaches' annual base salaries differ by gender and revenue streams, it is necessary to regress salary on productivity characteristics of the coach and institutional characteristics. Due to the limitations and anonymity of the survey, productivity of the coach is determined by years of experience and educational attainment. Institutional characteristics are determined by division of the school and autonomy structure.

Like Humphreys (2000), this study estimates the log-linear annual base salary using an ordinary least squares regression. Measuring the dependent variable in logarithms allows the regression equation to estimate the approximate proportional change in base salary when the independent variables change, *ceteris paribus* (Humphreys, 2000). The following model is used in this study:

$$\ln(\textit{basesalary}) = f(\text{GENDER, EXPERIENCE, DIVISIONI, AUTONOMY, HEADCOACH, (Head Coach * Gender), (Division I * Gender), (Autonomy * Experience)}). \quad (10)$$

where  $\ln(\textit{basesalary})$ , is the natural log of a coaches' annual base salary at a specific institution.

Characteristics of the head coach are measured with the variables: GENDER, YEARS, MASTERS, HeadCoach, DivingCoach, AssocCOACH. GENDER is a dummy variable taking on the value of 1 if the coach is a female and 0 if the coach is a male. The coefficient will capture the difference in annual base salary of a female swimming and diving coach. Previous literature suggests female coaches earn less than their male counterparts, therefore this study should follow a similar trend (Humphreys, 2000). If pay discrimination by gender is present, this coefficient will be negative and statistically significant.

YEARS is a continuous variable capturing the years of coaching experience the individual has up until August 2016. MASTERS is a dummy variable taking on the value of 1 if the coach has a Master's Degree and 0 if another type of higher education degree. Mincer's (1974) Equation and Human Capital Theory predict that as education and coaching experience increase, the coach will receive a higher annual base salary, *ceteris paribus*.

Institutional variables include: DIVISION, COED, and AUTON. DIVISION is a dummy variable taking on the value of 1 if the institution is a part of the NCAA Division I conference and 0 if a part of any other Division or League. The parameter of this variable estimates the annual base salary of a NCAA Division I swimming and diving coach. AUTON is a dummy variable representing the power five conferences: ACC, Big 12, Big Ten, Pac-12, and SEC. This variable takes on a value of 1 if the institution is a part of the autonomy structure and 0 if a part of the non-autonomy structure. The variable of autonomy is attempting to capture lucrative NCAA Division I institutions. The associated prestige and popularity of NCAA Division I schools in the autonomy structure



create a hypothesized trickle-down effect on salaries of coaches in lower-profile collegiate sports (Hobson, 2017). Theory associates Division I and Autonomy to be found at more prestigious and lucrative institutions, therefore, the sign of these parameters should be positive. If this trickle-down phenomenon of higher revenue generating sports is present we should expect to see an increased annual base salary for swimming and diving coaches of these power five conferences.

COED is a dummy variable taking on the value of 1 if the swimming and diving team has both male and female members, and 0 if the team is only single-gender. If prestige is associated with a single-gender team, then the coefficient should be negative. This variable was removed from the model due to insignificance.

Interaction variables were included in the model to calculate the expected difference in annual base salary if discrimination is present. The interaction variable (*Gender \* HeadCoach*) captures the difference in annual base salary of a female head coach in comparison to her male counterpart. If discrimination is present in annual base salary of a female head swimming and diving coach, we should find this variable to be negative and statistically significant. (*DivisionI \* Gender*) is another interaction variable included in the regression model. This parameter estimates if there is disproportional share of women coaching in Division I athletics. It also estimates if female coaches within the NCAA Division I conference require a premium to perform the same duties. The last interaction variable included in the model is (*Autonomy \* Experience*). The lucrative institutions associated with autonomy and the years of experience a coach has should have a positive effect on annual base salary. This

interaction variable estimates if more lucrative institutions are taking a disproportionate share of experienced head coaches compared to non-autonomy, NCAA Division I institutions.

The independent variables obtained from the survey capture the characteristics of the coach and institution. The definition and descriptive statistic of each variable are found in Table 1.

Table 1  
*Variable Definitions and Descriptive Statistics*

Variable	Definition	M	SD
$\ln(\text{basesalary})$	Log of the base salary of the Coach in 2016	4.7145	0.1825
GENDER	Dummy variable for gender (1 = Female)	0.2483	0.43251
YEARS	Years of experience coaching	8.68571	4.95763
DIVISION	Dummy variable for Division (1 = Division I)	0.56297	0.49669
COED	Dummy variable for team coached (1 = coed team)	0.69178	0.46229
MASTERS	Dummy variable for completion of Master's Degree (0 = No Master's Degree)	0.58793	0.492855
HeadCOACH	Dummy variable (1 = Head Coach)	0.60722	0.48892
DivingCOACH	Dummy variable (1 = Diving Coach)	0.125	0.3311
AssocHCOAH	Dummy variable (1 = Associate Head Coach)	0.04966	0.21749
AUTON	Dummy variable for autonomy of Division I School (1 = Autonomy)	0.23702	0.42574
IntHeadCoach&Gender	Interaction between Head coach and their gender (1 = Head Coach and Female)	0.130925	0.33770
IntDivisionI&Gender	Interaction between Division I and Gender (1 = Coach of a Division I team and Female)	0.13995	0.34733
IntAutonomy&YearsofExperience	Interaction between Autonomy and Years of Experience	1.614286	4.279758

The empirical model for salary determination is an extension of Kahn and Sherer's (1988), Humphreys (2000), and Brooke and Foster's (2010) analysis. The regression model takes on the following form:

$$\ln(\text{basesalary}_{ij}) = \beta_0 + \beta_1 \text{Gender} + \beta_2 \text{Experience} + \beta_3 \text{DivisionI} + \beta_4 \text{Autonomy} + \beta_5 \text{HeadCoach} + \beta_6 (\text{Gender} * \text{HeadCoach}) + \beta_7 (\text{DivisionI} * \text{Gender}) + \beta_8 (\text{Autonomy} * \text{Experience}) + \varepsilon_{ij} \quad (11)$$

## Estimation and Results

Table 2  
*OLS and Estimation Results*

Variable	Model Coefficient (t statistic)	Marginal Effect ( $\bar{\mu}$ * Coefficient)
Dependent Variable: $\ln(\text{basesalary})$		
GENDER	-0.07983 (0.021)**	\$-4,521.74
YEARSOFEXP	0.01003 (0.000)***	\$568.12
DIVISION1	0.08721 (0.000)***	\$4,939.76
AUTONOMY	0.17333 (0.000)***	\$9,817.78
COED	-	-
MASTERS	-	-
HeadCOACH	0.183008 (0.000)***	\$10,365.96
DivingCOACH	-	-
AssociatHeadCOACH	-	-
IntHeadCoach&Gender	0.04817 (0.165)	\$2,728.45
IntDivisionI&Gender	0.03894 (0.254)	\$2,205.64
IntAutonomy&YearsofExperience	-0.00497 (0.144)	\$-281.51
	$R^2 = 0.4626$	
	N = 385	

Notes. Significant at the 10% level\*  
Significant at the 5% level\*\*  
Significant at the 1% level\*\*\*

To estimate the validity of the model, an Ordinary Least Squares is used. The second column of Table 2 shows the regression estimation results from equation (11). The third column of Table 2 shows the estimated marginal effect of each independent variable, ceteris paribus. The regression results in Table 2 yield expected and significant results with an adjusted  $R^2$  value of 0.46. This log-linear set explains 46% of the variation

in a coach's annual base salary. A White test for heteroskedasticity confirms the variance of the error terms is constant. The residuals pass normality, omitted variable bias is not present, and serial correlation is not present. The estimated marginal effects were calculated by multiplying the mean salary of a swimming and diving coach by the coefficient of each independent variable.

In using the log-linear regression model, the variable for gender was found to be significant and negative at the 5% significance level. Annual base salary of a female swimming and diving coach is 7.9% less than a male swimming and diving coach. The marginal effect implies a female swimming and diving coach should expect to receive \$4,521.74 less than her male counterpart, keeping all other variables equal. These results differ from the findings of Humphreys (2000) but suggest that equal pay for female coaches in swimming and diving is necessary to retain women in coaching positions. This does not assume gender pay-gap discrimination is present, but warrants more research is necessary on the topic of pay differences in lower revenue generating sports.

The coefficients for years of experience, Division I, Autonomy, and head coach were found to be positive and statistically significant at the 1% level. This implies years of experience and the title of a head coach are strong predictors of an increased annual base salary. The title of head coach should increase an annual base salary by 18.3%. The marginal effect implies an individual with the title of head coach will receive \$10,365.96 more in annual base salary, keeping all the other variables equal. Therefore, the prestige and duties associated with head coaching elicit a higher salary, regardless of gender.

An NCAA Division I swimming and diving coach should expect to see an 8.7% increase in annual base salary compared to coaches in all other divisions or leagues. The

resources and prestige associated with NCAA Division I institutions leads to the intuitive result of a higher annual base salary. The marginal effect implies a swimming and diving coach at an institution a part of the NCAA Division I conference will make \$4,939.76 more than a swimming and diving coach from any other division or league.

If a coach is a part of an NCAA Division I autonomy institution they should expect to receive an even higher annual base salary. Swimming and diving coaches a part of the power five conferences should expect a 17.33% higher annual base salary than those a part of an NCAA Division I non-autonomy conference. On average swimming and diving coaches a part of the autonomy structure are making \$9,817.78 more in annual base salary than those a part of the non-autonomy structure. These results suggest institutions that generate more revenue in other athletic programs, mainly football and men's basketball, are paying coaches of lower revenue generating sports a higher annual base salary. This study found similar results to that of the data obtained from the NCAA Division I 2004-2014 revenue and expense report, implying the trickle-down effect of NCAA Division I head coaching salaries exists in the autonomy structure.

The interaction variables are insignificant, but were left in the final regression model because all econometric tests were passed with the inclusion. The coefficient of (*Gender \* HeadCoach*) is interesting because it shows a positive relationship between salary and female head coaches. The marginal effect implies that a female head swimming and diving coach receives \$2,728.45 more in annual base salary than her male counterpart. Due to insignificance, this variable is not reliable in concluding female head coaches are paid a premium to perform the same work. If this variable were to be significant and negative, discrimination in the annual base salary pay-gap would be

present. The coefficient of (*DivisionI \* Gender*) captures the difference in annual base salary between NCAA Division I female coaches and NCAA Division I male coaches. The marginal effect implies an NCAA Division I female coach is paid \$2,205.64 more than her male counterpart. Due to the limitations of this study more information is needed to conclude that female NCAA Division I coaches are paid a premium. The last interaction variable (*Autonomy \* Experience*) estimates if swimming and diving coaches a part of the autonomy structure and with more years of experience are receiving a higher annual base salary. This study draws insignificant, but interesting, results. The coefficient of this interaction variable is negative, meaning coaches a part of the autonomy structure and with more years of experience, may have a negative impact on a swimming and diving coaches annual base salary. This could imply coaches with more experience and a part of the autonomy structure are finding themselves trapped with a contract.

This empirical model supports the hypothesis that there is an annual base salary difference between male and female swimming and diving coaches within the NCAA Division I conference. It also supports the hypothesis that institutions in the NCAA Division I autonomy conference are able to pay swimming and diving coaches a premium. The increase in annual base salary of swimming and diving coaches may be subsidized from more lucrative sports like men's basketball and football. It cannot be said with certainty that pay discrimination exists in the profession of head coaches in swimming and diving, however, this study warrants more research on the topic.

## **Conclusion**

The analysis of this model provides empirical support that a male swimming and diving coach is more likely to earn a higher annual base salary in comparison to his female counterpart. It also provides empirical evidence that coaches who are a part of the NCAA Division I autonomy structure and have more years of experience receive higher annual base salaries.

The anonymity of coaches' personal identifiable information creates limitations of this study. Without being able to include specific demographic factors of the institution and the specific revenue stream, it is hard to draw concrete conclusions. Also, an important determinant of a coaches productivity is percentage of wins, which is unknown within this study. Further research should focus on characteristics of specific institutions in order to address discrimination or injustice in head coaching positions.

This study provides analysis to further the discussion on retaining women in head coaching positions. Swimming and diving is a sport that has disproportionate participation between female athletes and coaches, with more female athletes than coaches. In order to increase the participation rate of female head coaches, administrators need to take steps to improve the support system (Kamphoff and Gill, 2008). This includes creating a mentorship program for young female coaches, equitable salaries, and enforcing non-discriminatory policies. If more young women become inspired by their female head coaches, a more gender-balanced coaching profession will follow. While the future is bright for young female athletes, we must change society's construct on what it means to be a female coach.



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## Appendix

Regression results, Model 1: The dependent variable is the log of swimming and diving coaches' annual base salary. The independent variables include; gender, years of coaching, division, autonomy, role as a coach, and interaction variables.

Source	SS	df	MS	Number of obs =	385
Model	5.56001428	8	0.695001786	F (8,376) =	40.46
Residual	6.45816742	376	0.017175977	Prob > F =	0.000
Total	12.0181817	384	0.031297348	R - Squared =	0.4626
				Adj R - Squared =	0.4512
				Roos MSE =	0.13106

LnBASE	Coef.	Std. Err.	t	P >  t	[95% Conf. Interval]	
Gender1Female	-0.079833	0.0344809	-2.32	0.021	-0.147632	-0.0120334
YearsofCoachingExperience	0.0100342	0.001613	6.22	0.000	0.0068627	0.0132058
DivisionI	0.087212	0.0177779	4.91	0.000	0.0522554	0.1221685
Autonomy1Autonomy	0.1733296	0.0383965	4.51	0.000	0.0978309	0.2488283
HeadCoach	0.1830087	0.0188901	9.69	0.000	0.1458653	0.2201521
(HeadCoach * Gender)	0.0481691	0.0346517	1.39	0.165	-0.0199662	0.1163044
(Division I * Gender)	0.0389453	0.0341228	1.14	0.254	-0.0281501	0.1060407
(Autonomy * Experience)	-0.0049686	0.003391	-1.47	0.144	-0.0116363	0.001699
_cons	4.441449	0.0210271	211.22	0.000	4.400104	4.482795

Test for heteroskedasticity: This test concluded the variance in error terms is constant

White's test for Ho: homoskedasticity  
against Ha: unrestricted heteroskedasticity

chi2(23) = 32.98  
Prob > chi2 = 0.0814

Cameron & Trivedi's decomposition of IM - test			
Source	chi2	df	p
Heteroskedasticity	32.98	23	0.0814
Skewness	8.79	8	0.3606
Kurtosis	3.2	1	0.0738
Total	44.97	32	0.0638

Test for omitted variable bias:

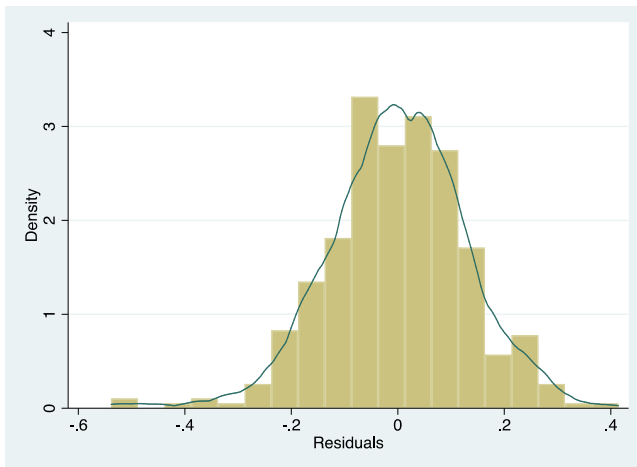
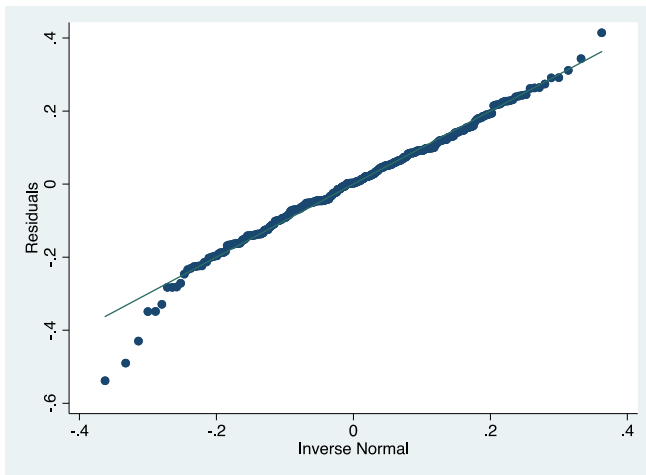
Ramsey RESET test using powers of the fitted values of LnBASE

H<sub>0</sub>: model has no omitted variables

F(3,373) = 2.37

Prob > F = 0.0706

Test for normality of residuals: This test concludes the residuals are distributed normally.



Test for serial correlation: This test concludes that the only variables correlated with each other are autonomy and the interaction of autonomy and years of experience.

	LnBASE	Gender	Years of Experience	Division I	Autonomy	Head Coach	(HeadCoach * Gender)	(Division I * Gender)	(Autonomy * Experience)
LnBASE	1.0000								
Gender	-0.1534	1.0000							
Years of Experience	0.4115	-0.0415	1.0000						
Division I	0.2217	-0.0016	0.1081	1.0000					
Autonomy	0.2398	0.0237	0.1054	0.4458	1.0000				
Head Coach	0.401	-0.1316	0.188	-0.3753	-0.3341	1.0000			
(HeadCoach * Gender)	-0.0313	0.6827	0.1091	-0.1425	-0.0486	0.2888	1.0000		
(Division I * Gender)	-0.0313	0.6515	-0.0965	0.3758	0.1996	-0.2390	0.2288	1.0000	
(Autonomy * Experience)	0.2514	0.0009	0.3239	0.3806	0.8539	-0.2650	-0.0257	0.1450	1.0000