

# Economic Determinants of Faculty Union Membership at Florida State University

Cecily Welsh      Warrington College of Business Administration, University of Florida

This study explores why associate professors, professors, and eminent scholars at Florida State University belonged to the United Faculty of Florida in 2006. It is hypothesized that union members gain some economic benefits in membership. Faculty members within the lowest paid departments, those producing the fewest amounts of publications, those earning the lowest salaries, and those closest to retirement were expected to be more likely to join the union. The 347 faculty members eligible for tenure were examined in the study. A regression analysis of the data was performed with variables describing information about these faculty members. Data on each faculty member's productivity, represented by each faculty's salary for 2006, the number of books he or she published, the number of articles that he or she published, and the year that he or she acquired a PhD, were compiled. Each faculty member's department affiliation was also noted. This data functioned as the independent variables in the four regressions performed. The dependent variable described faculty membership in the union (yes/no). Consistent with the hypothesis, the analyses showed that the most experienced faculty members were the least likely to join the union. Also as predicted, members of higher paid departments and those earning the highest salaries were less likely to join the union. The book and article variables proved to be unrelated to union membership. The study concluded that some levels of productivity, experience, and department affiliation can be common among faculty who joined the union and among faculty who did not join the union.

## Introduction

Unions are formed when employees decide working conditions, wages, or benefits can be improved when they negotiate as a group rather than as individuals. However, not every employee is a union member. Some employees decide not to join a union even though the union continues to bargain on their behalf for wages, benefits, and working conditions. Examining similarities and differences between union members and non-members can expose the benefits and costs of union membership.

Florida State University (FSU) faculty was the group chosen to study trends in union membership. Information on faculty members' department affiliations, salaries, numbers of articles and books published, and years of experience is publicly available and was gathered to create profiles of faculty members. The information gathered may explain why a faculty member did or did not join the union.

The United Faculty of Florida (UFF) is the state-wide bargaining unit for higher education faculty and professionals<sup>1</sup>. A chapter of the UFF bargains for FSU faculty and is known as the UFF-FSU. A large function of UFF-FSU activity is to achieve across-the-board monetary raises for all faculty members during contract negotiations. These

raises are universal and are not based upon individual faculty performance. An across-the-board-raise is in contrast to a merit-based raise, which is determined by individual faculty member performance. Through across-the-board monetary raises, faculty in lower-paying departments gain an increase in average salary relative to that of faculty in higher-paying departments. Additionally, faculty members who publish fewer books and articles and those who earn lower salaries are better represented by a union. In 2006, members of UFF-FSU paid 1% of their bi-weekly salaries in dues<sup>2</sup>. Therefore, it can be assumed that union members received some benefits in exchange for these dues.

Through contact with union President Jack Fiorito, I was able to obtain data on each faculty member's union membership status. Names were not disclosed, and information about each faculty member was placed into intervals in the final data set to protect privacy.

## Materials and Methods

The sample contained the 347 associate professors, professors, and eminent scholars employed at Florida State University who were eligible for tenure in 2006. Instruc-

---

<sup>1</sup> United Faculty of Florida Website:  
[www.unitedfacultyofflorida.org/page/5-90.html](http://www.unitedfacultyofflorida.org/page/5-90.html)

---

<sup>2</sup> United Faculty of Florida-Florida State University Website:  
[www.uff-fsu.org](http://www.uff-fsu.org)

tors, assistant professors and other faculty members who had not achieved enough success in publications or other work to become eligible for tenure were not included in the sample. Faculty members eligible for tenure were assumed to be the most likely to join the union. The faculty members studied were employed in 23 departments<sup>3</sup>. All departments employed 10 or more associate professors, professors, or eminent scholars. Every faculty member examined had published at least one article or book. The books and articles published in these departments could be easily compared. Departments in which faculty published forms of art or media were not included in the sample. The name, rank, salary, and department affiliation of each faculty member in 2006 were gathered from the UFF-FSU salary archive<sup>4</sup>.

## Statistical Analysis

*Dependent Variable.* The dependent variable was a faculty member's UFF-FSU membership status. The variable took a value of 1 if the faculty member was a member of the union in 2006 and a 0 if the faculty member was not a member of the union.

*Independent Variables.* Average Department Salary was the average salary of all the faculty members within their respective departments within the sample in 2006. The data were taken from the UFF-FSU salary archive. In departments earning a lower average salary, faculty members may have felt that they would benefit from across-the-board raises and collective bargaining power. These department members had more incentives to support the union, and union members may have encouraged their fellow department members to join as well. It is hypothesized that Average Department Salary will have a negative effect on UFF-FSU membership status.

The Salary, Articles Published, and Books Published variables measured individual motivations in union membership. The 2 salary variables and 4 publication variables were used as 2 different measurements of productivity for the entire career of the faculty member. The salary variables were used in Regressions 1 and 3 and the Books and Articles Published Variables are used in Regressions 2 and 4. For each characteristic the faculty member was segmented into a top, middle, and bottom third division of his or her department within the sample. Two dummy variables were used to describe to which

division a faculty member belonged. One variable indicated that the member fell within the top segment of his or her department within the sample and the other indicated that the member fell within the middle segment. This method was used to control for differences in salary, article publications, and book publications between departments.

*Salary Variables.* The salary of a faculty member could be an indicator of productivity and value to the University. Florida State may have used the promise of a higher salary to lure a faculty member away from the private sector or another university. Salary could also be used as a measure of productivity and the desire of the University to retain that faculty member. Salary data for each faculty member in 2006 was obtained from the UFF-FSU Salary Archive.

The Top Third Salary variable took a value of 1 if the faculty member's salary was in the top third segment of the salaries in his or her department within the sample and took a value of 0 otherwise. A faculty member that received a higher salary may have been more valued by the University and had less to gain from an across-the-board monetary raise. It is hypothesized that the Top Third salary variable will have a negative effect on UFF-FSU membership status.

The Middle Third Salary variable took a value of 1 if the faculty member's salary was in the middle third segment of salaries within his or her department within the sample. It took a value of 0 otherwise. These faculty members might have been highly productive but had less experience. They may have been more valued by the University and benefited more from merit-based raises. It was hypothesized that this variable will have a negative effect on UFF-FSU membership status.

*Articles Published Variables.* The productivity of faculty members was partly measured by the number of articles they published. Articles were examined because it was the most consistent measure of productivity among all departments studied. The number of articles published was gathered directly from faculty resumes. If the resume for a faculty member was not available, the number of articles was taken from the Web of Science Database<sup>5</sup>. The articles counted were authored or co-authored journal publications by the faculty member through 2006.

The Top Third Articles Published variable took a value of 1 if the number of articles published by the faculty member was in the top third segment of his or her department within the sample and took a value of 0 otherwise. A faculty member who produced more articles would have been better compensated by a merit-based raise. They would have had little incentive to support an organization which advocated across-the-board raises. It

<sup>3</sup> Departments include: Accounting, Biological Science, Chemistry & Biochemistry, Communication, Computer Science, Criminology & Criminal Justice, Economics, Education Psychology & Learning Systems, English, Finance, History, Information Department, Management, Marketing, Mathematics, Mechanical Engineering, Meteorology, Oceanography, Physics, Political Science, Psychology, Public Administration, and Sociology

<sup>4</sup> The archive can be found on the UFF-FSU Website: [www.uff-fsu.org/saldata.html](http://www.uff-fsu.org/saldata.html)

<sup>5</sup> This is an international database containing millions of articles from the years 1900 to 2007 published in academic journals. The Database is maintained by Thomas Scientific™. The website can be accessed at: <http://isiwebofknowledge.com/>

was hypothesized that this variable would have a negative effect on UFF-FSU membership status.

The Middle Third Articles Published variable took a value of 1 if the number of articles published by the faculty member was in the middle third segment of the department within the sample and a value of 0 otherwise. The faculty members who published a number amount of articles may have been more productive in an effort to move up in rank. These faculty members would have gained less from an across-the-board-raise. It was hypothesized that this variable would have a negative effect on UFF-FSU membership status.

**Books Published Variables.** Significant time and effort are required for a faculty member to publish a book. Therefore, books published could be considered an indicator of productivity. In some departments faculty published as many books as articles. To control for these effects, a measure of the number of books published by a faculty member through 2006 was used. This number was taken directly from the faculty member's resume. If a resume was not available, the quantity of books was gathered from Amazon.com. Only full books authored or co-authored by the faculty member were counted.

If the amount of books a faculty member published was within the top third segment of his or her department within the sample, the Top Third Books Published variable took a value of 1. Otherwise, the variable took a value of 0. Faculty members publishing the most books in their departments were conducting a great amount of research and could have been considered highly productive. These faculty members had less incentive to support an organization lobbying for higher across-the-board raises because they would have benefited more from merit-based raises. This variable was hypothesized to have a negative effect on UFF-FSU membership status.

The Middle Third Books Published variable took a value of 1 if the number of books published by the faculty member was within the middle third segment of the department within the sample and a value of 0 otherwise. Members in this group may have been productive but had less experience. They would have gained more from merit-based raises. It was hypothesized that this variable would have a negative effect on UFF-FSU membership status.

**Experience Variables.** Experience could be an indicator of a faculty member's productivity. The difference between the year the faculty member acquired a PhD and the year 2006 was used as a proxy for experience<sup>6</sup>. The year that the PhD was acquired was taken from the department website or the faculty member's resume. Thirty-nine faculty members did not have data available from either location. For these members the average

difference between the year the PhD was acquired and the year of first publication was calculated among all other department members within the sample. This average difference was then subtracted from the year of the faculty member's first publication. This difference was used as the proxy for experience. Experience was expected to play a greater role in the decision to join or not join the union and greatly influence faculty members who had the most experience. For this reason, the top two segments of experience were included in the four regressions.

The 30+ Years variable took a value of 1 if the faculty member had a difference of more than 30 years between acquiring a PhD and 2006 and a value of 0 otherwise. Faculty members with more than 30 years of experience could have been less productive because they were close to retirement. These members would have benefited more from across-the-board-raises. This variable was hypothesized to have a positive effect on UFF-FSU membership status.

The 15-29 Years variable took a value of 1 if the faculty member had a difference of 15-29 years between acquiring a PhD and 2006 and a value of 0 otherwise. Faculty members with this amount of experience were further from retirement and were likely to still be productive. These members would have gained less from an across-the-board raise. The variable was expected to have a negative effect on UFF-FSU membership status.

## Results

A total of 4 regressions were run. The Average Department Salary, 30+ Years, and 15-30 Years Variables were used in all four regressions. The salary variables were used as an alternate productivity measurement to the Articles and Books Published Variables. The salary variables were used in Regressions 1 and 3 while the Articles and Books Published Variables were used in Regressions 2 and 4. Regressions 1 and 2 contained the entire sample of 347 professors. Regressions 3 and 4 examined a subset of the sample. The 16 departments studied in the subset contained at least 1 union member<sup>7</sup>. In no departments were 100% of the members also union members. The subset of 16 departments is studied because the costs of joining the union in the excluded 6 departments may have been greater due to departmental influences. These regressions were run to remove the effects of the 6 departments that contained no UFF members. Decisions to join or not join the union would not have been due to individual motivations. Variations in union membership

<sup>6</sup> The highest degree attainment for three faculty members within the English Department was a Masters. For these faculty members, the year they acquired their Masters was used in place of the year a PhD was acquired.

<sup>7</sup> In the sub-set the Departments studied included: Biological Science, Communication, Computer Science, Criminology & Criminal Justice, Education Psychology & Learning System, English, History, Management, Marketing, Mathematics, Meteorology, Oceanography, Physics, Psychology, Public Administration, and Sociology

would have been non-existent. A total of 265 faculty members were studied in Regressions 3 and 4.

**Average Department Salary.** The coefficient of Average Department Salary proved to be negative and statistically significant at the 95% level in Regressions 1 and 2. The coefficient was negative but not statistically significant in Regressions 3 and 4. The results were consistent with the hypothesis that faculty members belonging to departments in which members earned a lower average salary felt that they would benefit more from across-the-board monetary raises. Members of lower-paying departments could have been more likely to join and support the activities of a collective bargaining unit. The impacts were calculated by multiplying the coefficients by the standard deviation of the variable located in the Table 1 of Appendix 1. The variable's impact was  $-0.068875577$  in Regression 1 and  $-0.069849868$  in Regression 2. The impacts represent the effect of the variable on UFF-FSU membership status. A faculty member employed in a department with a higher average salary was 6.8-6.9% less likely to join the union. The impact of both coefficients was very low suggesting that, overall, average department salary was not a huge determinant for department members in the decision to join the union. When the departments containing no union members were removed from the sample, the coefficient became statistically insignificant.

**Salary Variables.** The Top Third Salary coefficient was negative and marginally significant at the 90% level in Regression 1. The coefficient in Regression 3 was negative but not significant. The signs of the coefficients were consistent with the hypothesis. Faculty members who received the highest salaries in their departments would have been less likely to join the union because they would have benefited more from merit based raises than across-the-board raises. Since the variable was dichotomous and indicated if the faculty member belonged in the category, the impact is the value of the coefficient. The variable had an impact of  $-0.06896$  in Regression 1. The impact was the probability that a faculty member within this category would join the union. A faculty member earning in the top third of salaries within his or her department was 6.8% less likely to join the union. The low impact in Regression 1 suggested that salary for top-third earners in the departments was not a huge determinant in the decision to join or not join the UFF-FSU.

The coefficient of the Middle Third salary variable was negative and insignificant in both Regressions 1 and 3.

Only one salary variable was marginally significant in both regressions. This might suggest that in 2006 the decision to join the union was determined little by how much salary a faculty member earned.

**Articles Published Variables.** The Top Third Articles coefficient was positive and insignificant in Regressions 2 and 4. The signs of the coefficients contradicted the predicted negative sign. It was hypothesized that faculty

producing the most articles in the department would have been highly productive and therefore less likely to join a union advocating across-the-board-raises.

The Middle Third Articles coefficient was negative and insignificant in Regressions 2 and 4.

**Books Published Variables.** The Top Third Books coefficients were positive and insignificant in Regressions 2 and 4. The coefficient of the Middle Third Books Variable was negative and insignificant in Regressions 2 and 4.

The mean values for the Top and Middle Third Books Variables were not in the same range as the Articles or salary variables. Segmentation of faculty members into three categories should have resulted in mean values that were within the range of 0.3 to 0.36 for the Salary, Articles, and Books Variables. The mean values for the Books Variables were between 0.083018868 and 0.219020173. The unusual range was present because the sample included departments in which few or no members published books. The Book Variables' mean values were skewed because members of these departments could not be separated into three separate categories. A sample eliminating departments which faculty members could not be properly segmented did not yield enough data points to run a viable regression.

**Experience Variables.** The coefficients for the 30+ Years Variable were negative in all four regressions. The coefficient was statistically insignificant in Regression 1. The coefficients were statistically significant at the 95% level in Regressions 2, 3, and 4. The sign of the coefficients were inconsistent with the hypothesis that faculty members closest to retirement would join the union because they were declining in productivity and would gain more from across-the-board monetary raises. The signs suggested that faculty members closer to retirement were less likely to join the UFF-FSU. This may be because the union negotiates contracts for future years. Faculty members very close to retirement would have had less incentive to financially support an organization that negotiated for future benefits that they would not receive. Since the variable is dichotomous, describing if a faculty member has a characteristic or not, the coefficient value is also the impact. The variable had an impact of  $-0.127855993$  in Regression 2,  $-0.161880839$  in Regression 3, and  $-0.2122975$  in Regression 4. The impacts measured the effect of belonging to this category on a faculty member's decision to join the union. Faculty members with more than 30 years of experience were 12.7-21% less likely to join the union than faculty with 0-30 years of experience. The impact was noticeably large in Regression 4, which examined a sample containing only departments with at least 1 union member. The impact of the variable in Regression 4 was highest of any variable in any regression run. The results suggested that in departments in which at least 1 union member, the faculty with more than 30 years of experience were the least likely to join the UFF-FSU.

The 15-30 Years coefficient was negative in all four regressions. The coefficient was not significant in Regression 1. It was marginally significant at the 90% level in Regression 2. In Regression 3 the coefficient was marginally significant at the 90% level. In Regression 4 the coefficient was statistically significant at the 95% level. The signs of the coefficients were consistent with hypothesis that faculty members in the middle range of experience were productive and would have benefited more from merit-based raises. The variable was dichotomous, indicating if a faculty member was within the category represented by the variables. Therefore, the values of coefficients were also the values of the impacts of the variable on union affiliation. The variable had impacts of -0.070785351 in Regression 2, -0.104089579 in Regression 3, and -.128149172 in Regression 4. The impacts measured the effect of belonging to this category on a faculty member's decision to join the union. Faculty members in Regression 2 with 15-30 years of experience were only 7% less likely to join the UFF-FSU. This suggests that in the entire sample of faculty, a middle-range of experience was not a strong determinant of union affiliation. In Regressions 3 and 4, a faculty member with 15-30 Years of experience was 10.4-12.8% less likely to join the union. This suggests that experience played a larger role among the measured variables in the decision of a faculty member who had a mid-range of experience within his or her department to join or not join the union. The impact increased from 10.4% to 12.8% when a subset of departments with at least one union member was examined, magnifying the effect.

## **Conclusion**

This study has yielded interesting findings. The variables having the greatest impact on a faculty member's decision to join UFF-FSU were the experience variables. There was also evidence that members of higher-paid departments and those receiving the highest salaries in their departments were less likely to join the union. The findings for the individual publication variables were not conclusive. Alternate variables such affiliation to other union members, political ideals, and personal views may have better measured a faculty member's individual motivation in joining or not joining the union. However, these variables were difficult if not impossible to measure. A larger sample measuring more indicators of productivity such as conference presentations, class level taught, and experience outside the teaching field may have provided better results. However, these variables were outside the scope of the time and confidentially constraints of the project. The findings in this study suggest that members of higher-paid departments, earning the highest salaries in their departments, and the faculty that had the most experience had lower probabilities of joining the UFF-FSU.

## Appendix 1

Table 1. Summary of Statistics

Regression	Variable	Mean	Standard Deviation	Minimum	Maximum
<b>1</b>	<i>UNION AFFILIATION</i>	0.178674352	0.383632585	0	1
	<i>Average Salary</i>	84840.95655	12581.60179	63389.18182	111633.7
	<i>Top Third Salary</i>	0.360230548	0.480760421	0	1
	<i>Middle Third Salary</i>	0.328530259	0.470356987	0	1
	<i>30+ Years</i>	0.288184438	0.453571429	0	1
	<i>15-29 Years</i>	0.492795389	0.500670038	0	1
<b>2</b>	<i>UNION AFFILIATION</i>	0.178674352	0.383632585	0	1
	<i>Average Salary</i>	84840.95655	12581.60179	63389.18182	111633.7
	<i>Top Third Books</i>	0.219020173	0.414179553	0	1
	<i>Middle Third Books</i>	0.100864553	0.301584163	0	1
	<i>Top Third Articles</i>	0.354466859	0.479042205	0	1
	<i>Middle Third Articles</i>	0.328530259	0.470356987	0	1
	<i>30+ Years</i>	0.288184438	0.453571429	0	1
	<i>15-29 Years</i>	0.492795389	0.500670038	0	1
<b>3</b>	<i>UNION AFFILIATION</i>	0.233962264	0.424149504	0	1
	<i>Average Salary</i>	81279.56226	10185.96365	63389.18182	108407.5833
	<i>Top Third Salary</i>	0.354716981	0.479332727	0	1
	<i>Middle Third Salary</i>	0.328301887	0.470483857	0	1
	<i>30+ Years</i>	0.324528302	0.469084239	0	1
	<i>15-29 Years</i>	0.464150943	0.499656829	0	1
<b>4</b>	<i>UNION AFFILIATION</i>	0.233962264	0.424149504	0	1
	<i>Average Salary</i>	81279.56226	10185.96365	63389.18182	108407.5833
	<i>Top Third Books</i>	0.218867925	0.41426121	0	1
	<i>Middle Third Books</i>	0.083018868	0.276432803	0	1
	<i>Top Third Articles</i>	0.350943396	0.478168318	0	1
	<i>Middle Third Articles</i>	0.324528302	0.469084239	0	1
	<i>30+ Years</i>	0.324528302	0.469084239	0	1
	<i>15-29 Years</i>	0.464150943	0.499656829	0	1

Table 2. Regression Analyses

<b>Regression</b>	<b>R-Square</b>	<b>Adjusted R-Square</b>		
1	0.050538198	0.036616471		
2	0.056008942	0.036516502		
3	0.035022681	0.016393775		
4	0.044803848	0.018786833		
<b>Regressions 1,2,3,4</b>				
<b>Variable Average Salary</b>				
	<i>Coefficient</i>	<i>1-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
1	-5.47431E-06	0.000444033	Yes	-0.068875577
2	-5.55175E-06	0.000379804	Yes	-0.069849868
3	-2.86376E-06	0.132834069	No	
4	-2.85468E-06	0.133707005	No	
<b>Variable 30+ Years</b>				
	<i>Coefficient</i>	<i>2-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
1	-0.087749849	0.148025461	No	
2	-0.127855993	0.034186197	Yes	-0.127855993
3	-0.161880839	0.038734417	Yes	-0.161880839
4	-0.2122975	0.005750249	Yes	-0.2122975
<b>Variable 15-30 Years</b>				
	<i>Coefficient</i>	<i>1-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
1	-0.057708594	0.141806386	No	
2	-0.070785351	0.093679103	Marginal	-0.070785351
3	-0.104089579	0.070544759	Marginal	-0.104089579
4	-0.128149172	0.034842505	Yes	-0.128149172

<b>Regressions 1 and 3</b>				
<b>Variable Top Third Salary</b>				
	<i>Coefficient</i>	<i>1-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
1	-0.06896103	0.093613481	Marginal	-0.06896103
3	-0.064074375	0.173446988	No	
<b>Variable Middle Third Salary</b>				
	<i>Coefficient</i>	<i>1-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
1	-0.040295552	0.217666107	No	
3	-0.035606028	0.29540487	No	
<b>Regressions 2 and 4</b>				
<b>Variable Top Third Books</b>				
	<i>Coefficient</i>	<i>2-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
2	0.011862143	0.815899134	No	
4	0.028700507	0.657401165	No	
<b>Variable Middle Third Books</b>				
	<i>Coefficient</i>	<i>1-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
2	-0.051937874	0.224954705	No	
4	-0.014078283	0.441288699	No	
<b>Variable Top Third Articles</b>				
	<i>Coefficient</i>	<i>2-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
2	0.034424547	0.506946333	No	
4	0.064394365	0.334301726	No	
<b>Variable Middle Third Articles</b>				
	<i>Coefficient</i>	<i>1-Tail Test P-Value</i>	<i>Significance</i>	<i>Impact</i>
2	-0.051134484	0.158464321	No	
4	-0.048322101	0.231364412	No	