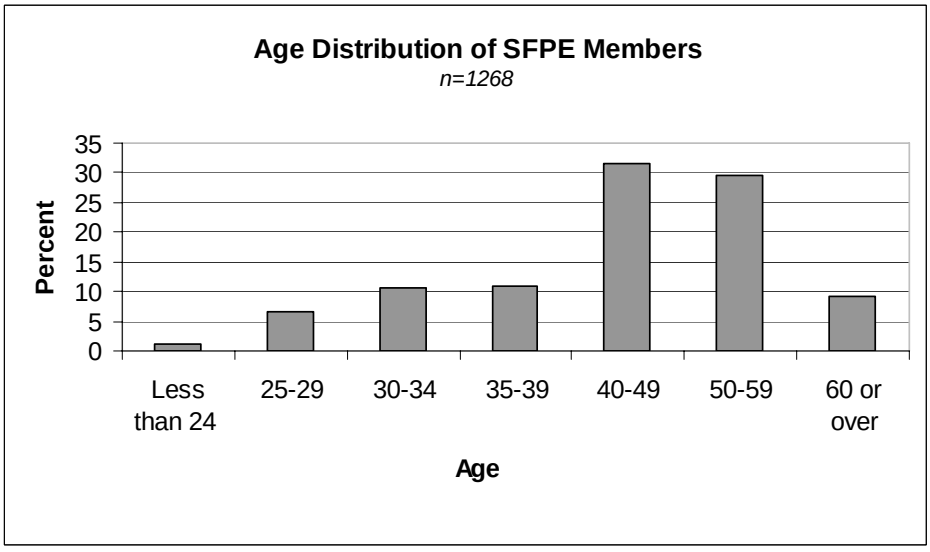
2005 Profile of the Fire Protection Engineer
Society of Fire Protection Engineers

This is the thirteenth survey of members that the Society of Fire Protection Engineers has conducted since the organization was instituted in 1976. Data was collected from SFPE members from mid to late 2005. In addition to demographic and salary questions, this survey also included questions about the services that SFPE offers its' members and their satisfaction. A total of 1268 members responded to the survey, representing approximately 28% of the total membership. Elizabeth Novatny of Novatny Consulting conducted the data analyses.

Demographic Profile

The highest percentage of respondents (32%) is concentrated in the cohort aged 40-49 years old, followed by 30% of respondents aged 50-59. Both cohorts 30-34 and 35-39 years old represent approximately 11% of survey respondents. Nine percent of respondents are 60 years old or older, while 7% are in the age group 25-29. Only 16 respondents are 24 years of age or younger, representing just over 1% of total respondents to the survey.

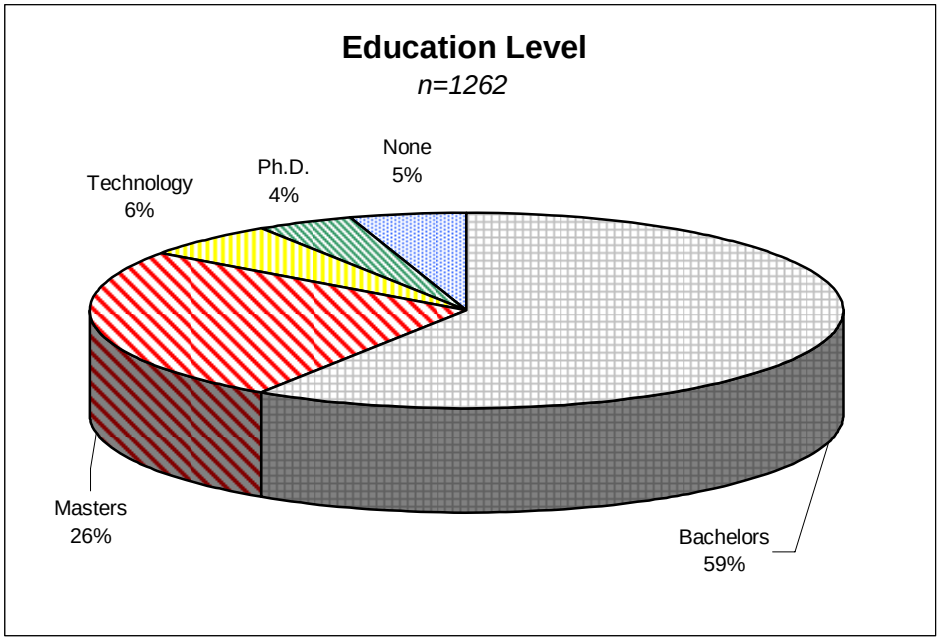
Chart 1



The large majority (87%) of the respondents work in the United States, followed by 4% who live in Canada. Three percent of survey respondents work in Europe. Approximately, 1% of members each work in Far East Asia, Central and South America, Australia, New Zealand, and the Middle East. Several people, however, responded that they work in more than one country. For many members where they live is also where they work, but for some respondents it appears that they live in one country, but they also perform work in other countries.

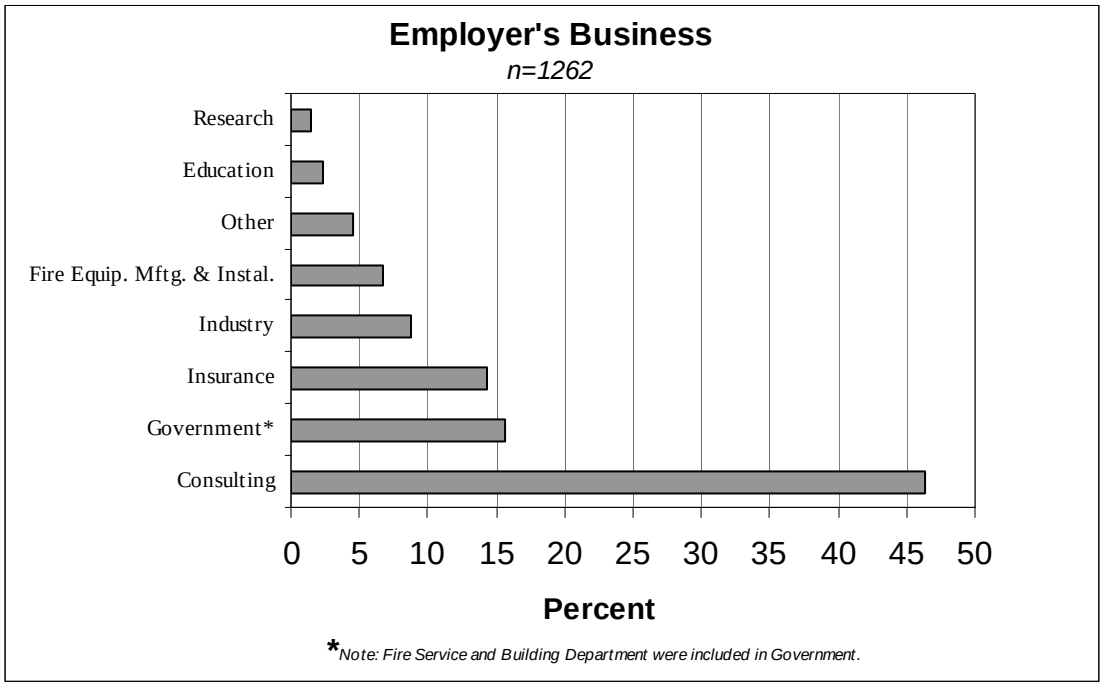
As shown in the following pie chart, a Bachelors degree is the highest level of education earned for the majority (59%) of survey respondents (Chart 2). Twenty-six percent of respondents had earned a Masters degree, while only 4% of respondents had earned a Ph.D. degree. Five percent of respondents had no degree and 6% had earned a Technology degree.

Chart 2



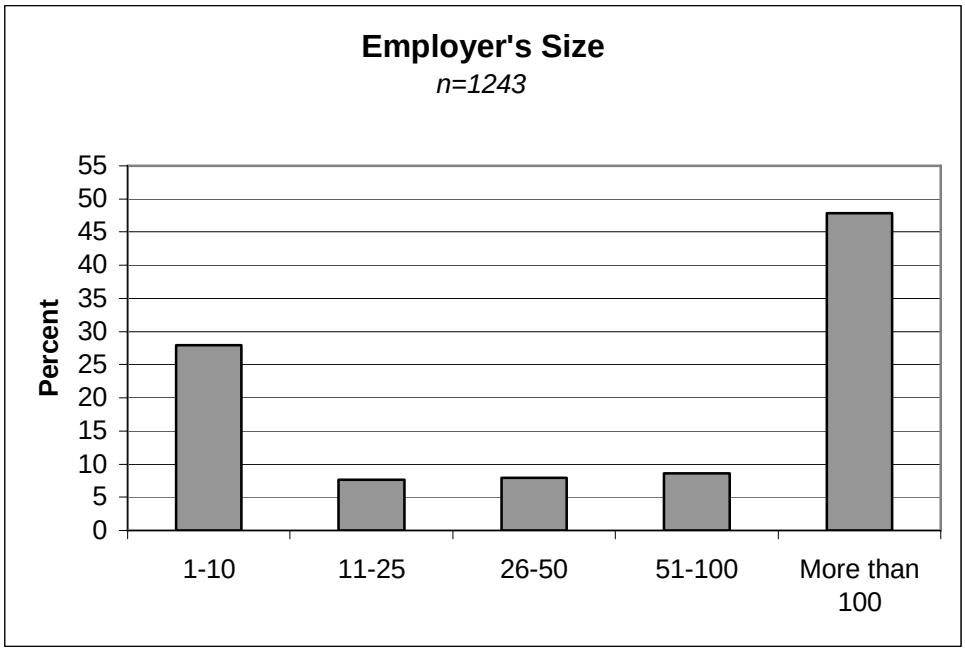
Similar to previous surveys, consulting and engineering services remains the largest employer with 46% of respondents working in this type of business (Chart 3). Sixteen percent of respondents work for the federal, state or local government. Because the fire service and building department are subsets of the government, workers in these groups are included under the government category. Insurance companies are the next largest employer with 14% of respondents working in this business. Nine percent of respondents work in industry, followed by fire equipment manufacturing and installation employing 7% of respondents. Five percent of respondents are employed in other sectors. Two percent of survey respondents are employed in education and only 1% of respondents are working in research.

Chart 3



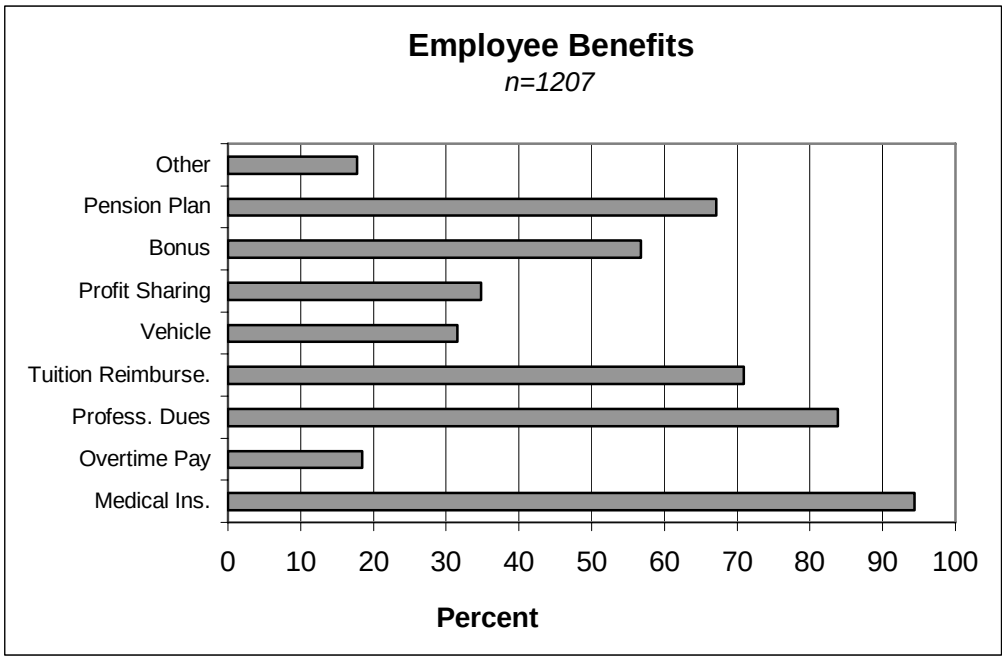
Forty-eight percent of survey respondents' employers employ 100 or more people (Chart 4). Those businesses with 1-10 employees constitute 28% of survey respondents. Nine percent of respondents are working at a company with between 51-100 employees. For businesses with between 11-25 and 26-50 employees, 8% of respondents are employed in these sizes of companies.

Chart 4



The vast majority of survey respondents receive medical insurance (94%), professional dues (84%), and tuition reimbursement (71%) as an employee benefit (Chart 5). Sixty-seven percent of respondents also have a pension plan while 57% receive some type of bonus. Thirty-five percent of survey respondents also have employee profit sharing while 32% have a vehicle. Only 18% of respondents receive overtime pay. Eighteen percent of respondents receive other benefits, such as a 401(K) plan; compensation time; flexible spending accounts; flexible work schedule; housing stipend; and dental, vision and/or life insurance.

Chart 5



The majority of survey respondents (62%) work as a consultant, project or program engineer, or in a technical position. Thirty-four percent of respondents are a CEO, principal or a manager in their company. The remaining 4% of respondents' jobs are not engineering related. The following chart illustrates the most frequently performed tasks (Chart 6). Respondents were allowed to select up to two responses. The most frequently performed task (46%) is planning project drawing reviews for code requirements. The second most frequent task is fire protection systems design (32%) and the third is risk management (28%). Physical facility fire prevention inspection is the fourth most frequently performed task (23%).

Chart 6

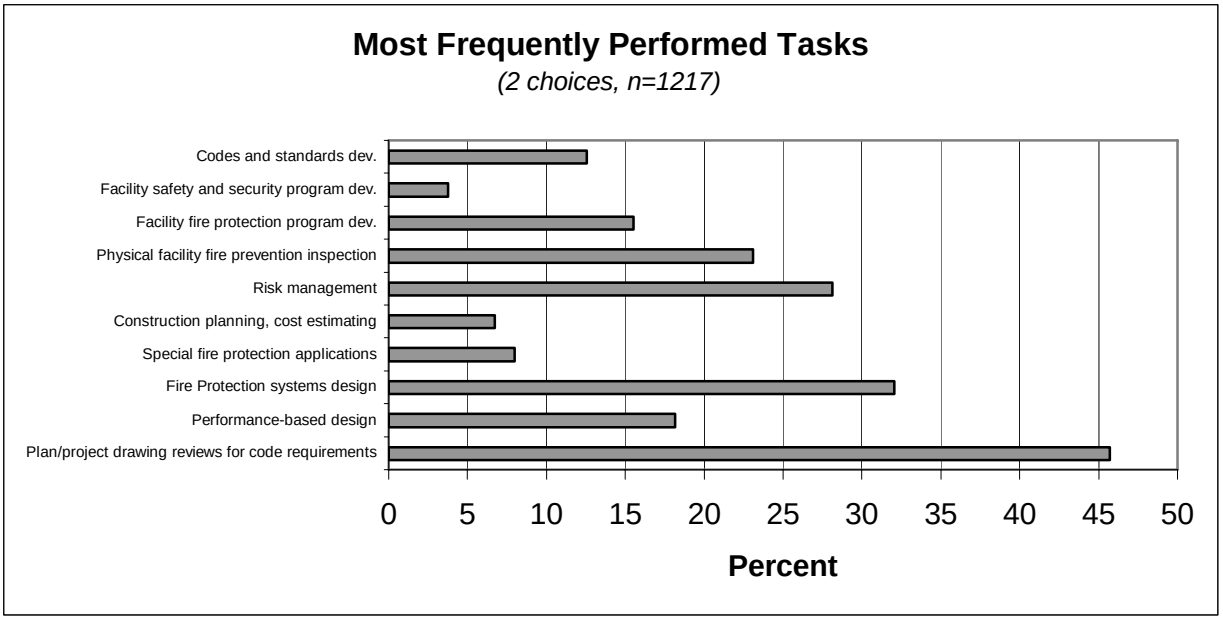


Chart 7 shows that 36% percent of respondents are licensed in one state. Twenty-eight percent of survey respondents are licensed in two or more states. The majority of respondents (58%) are licensed in only one country and 3% are licensed in two or more countries (Chart 8). Of those survey respondents who have a license or charter, 74% have a license or charter in fire protection engineering (Chart 9). Second most frequently cited license or charter is in mechanical engineering (17%). Eight percent or less of survey respondents have a license or charter in the remaining categories. Please note that respondents were asked to select *all* that apply.

Chart 7

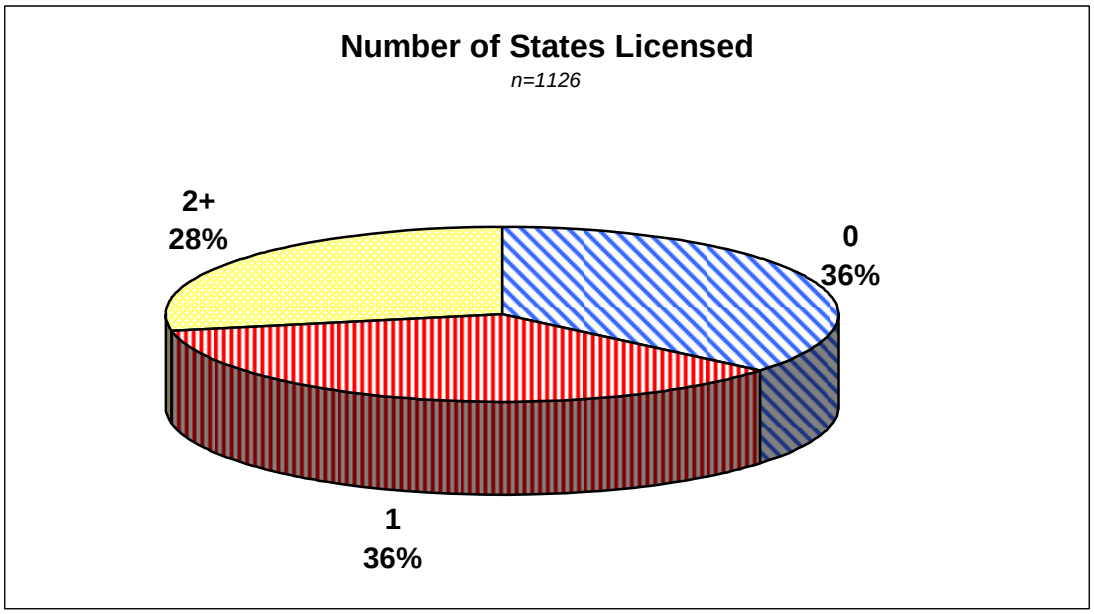


Chart 8

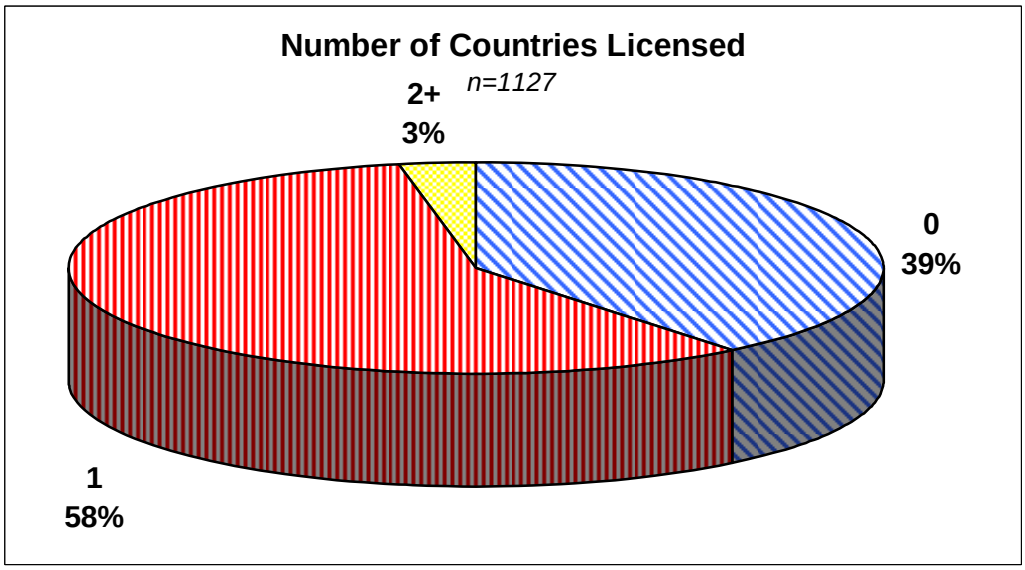


Chart 9

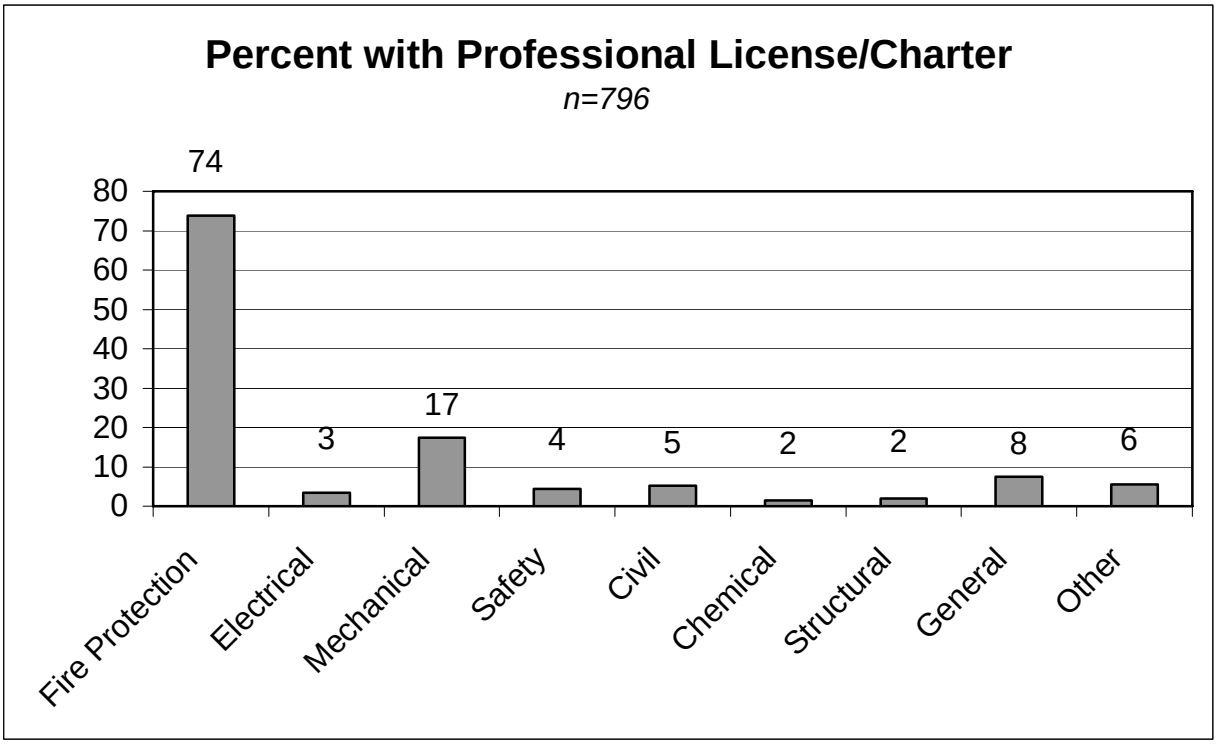


Chart 10 illustrates that 87% of respondents are a member of another organization besides SFPE. The National Fire Protection Association is the most popular with 89% of those respondents belonging. Membership in ICC constitutes 15% of respondents, followed by the NFSA with 10% of respondents belonging. Chart 11 shows respondents membership in other organizations.

Chart 10

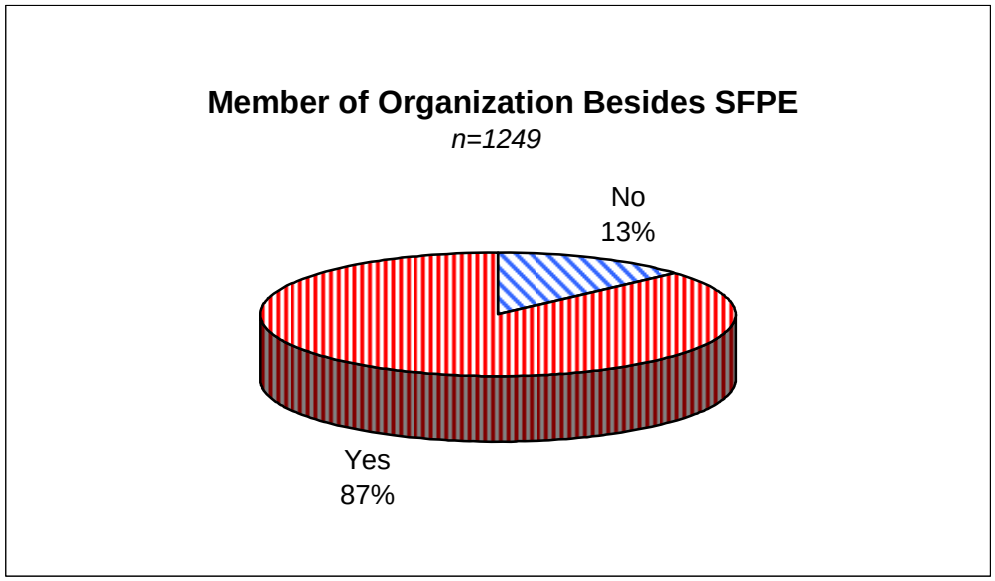
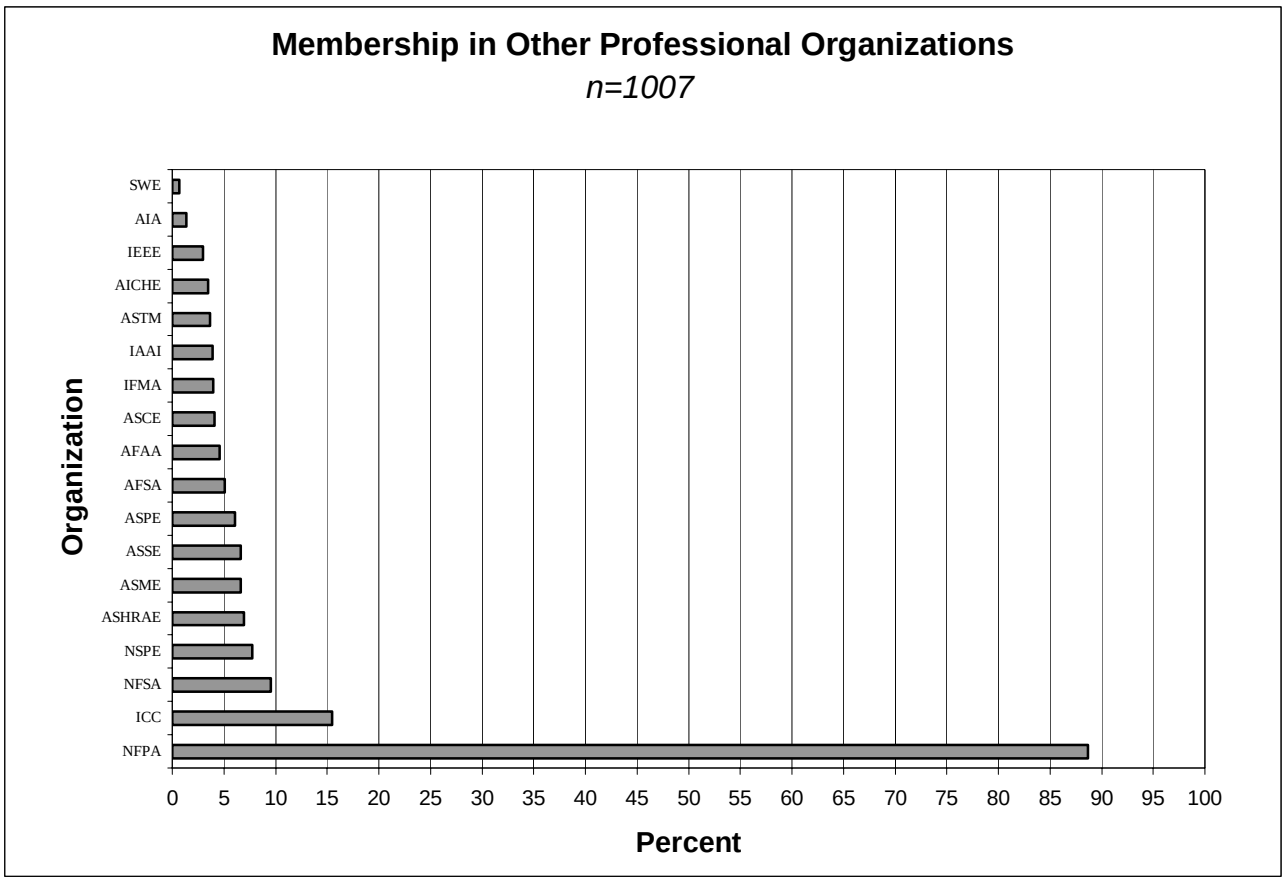


Chart 11

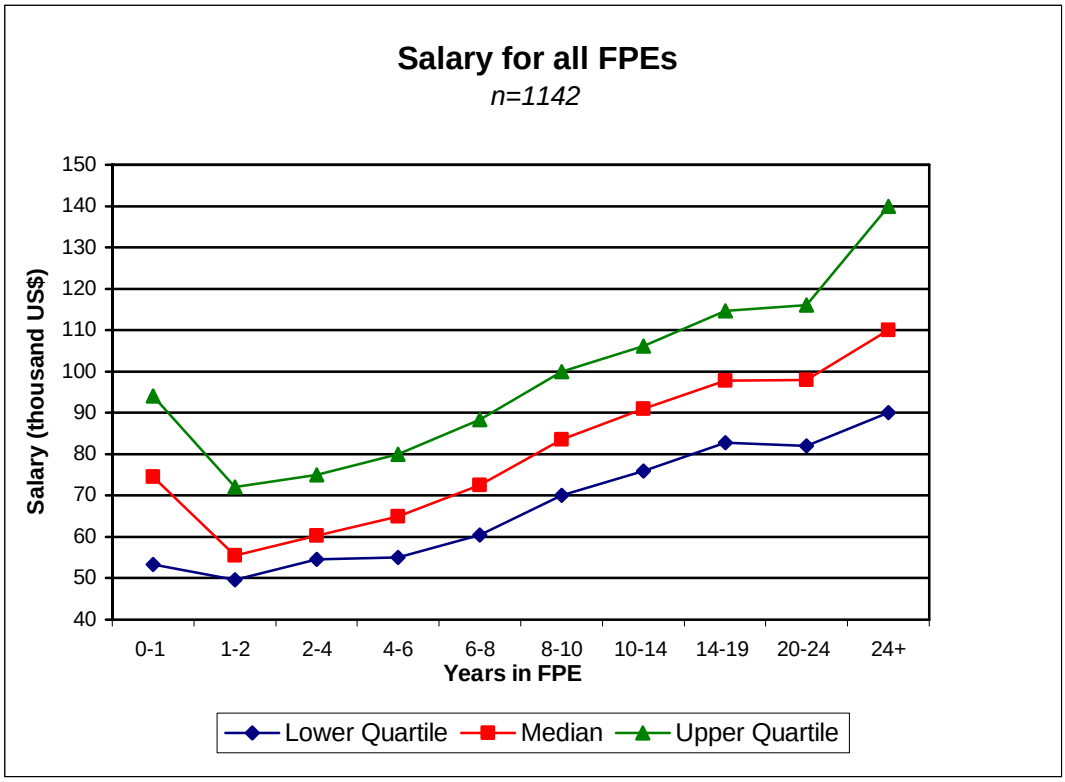

Membership in Other Professional Organizations
n=1007
Organization
SWE
AIA
IEEE
AICHE
ASTM
IAAI
IFMA
ASCE
AFAA
AFSA
ASPE
ASSE
ASME
ASHRAE
NSPE
NFSA
ICC
NFPA
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
Percent

Salary Analysis

This section consists of salary data analyses. One of the most influential factors in determining a person's salary is years' experience working, in this case experience in practicing fire protection engineering. Data based on years practicing fire protection engineering was used for the salary analyses. However, considering the fact that 45% of respondents have an engineering degree other than fire protection and 12% have a non-engineering degree, this other experience is influencing the data results. For example, it is possible that a person could have been working as a civil engineer for 20 years, but has only been practicing fire protection engineering for two of those years. This scenario is quite different from an engineer who has only been working two years and has been practicing fire protection engineering for the entire time. In addition, the small number of respondents who stated that they have worked in fire protection engineering two years or less is a limitation of the results. Several respondents stated that they had 0-1 years practicing fire protection engineering and 0-1 years total working as an engineer, were 50+ years old, and made a high salary (100K+). While this scenario seems unlikely, it is impossible to determine which data or even if the data is incorrect. Therefore, we decided to use this data in the analysis. Caution should be taken when using this data, in particular for the groups who reported having 0-1 years' experience in fire protection engineering. Regression analysis was considered for this data, but it was determined that performing this type of analysis would not substantially contribute to the accuracy of the overall results. Results are also influenced by the fact that the categories for years practicing fire protection engineering were not mutually exclusive. With these caveats in mind, the following are the results of the salary survey.

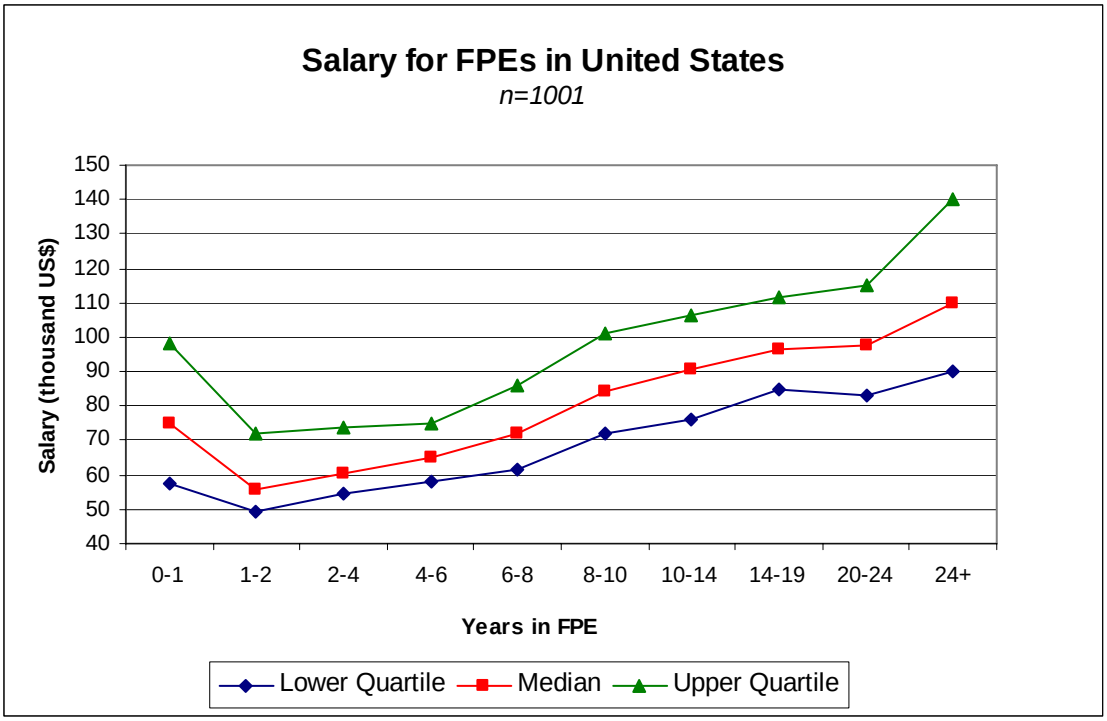
Graph 1 shows the total 2004 salary, including bonuses, for all respondents as a function of years' experience as a fire protection engineer. Excluding the data for those respondents who reported having worked only 0-1 years in fire protection engineering, the graph shows an expected increase in salary as a person gains more experience. For those respondents with 1-2 years in fire protection, the median income in 2004 including bonuses was $55,500. For those respondents with 24 or more years' experience, the median income in 2004 was $110,000 (Appendix A, Table 1).

Graph 1



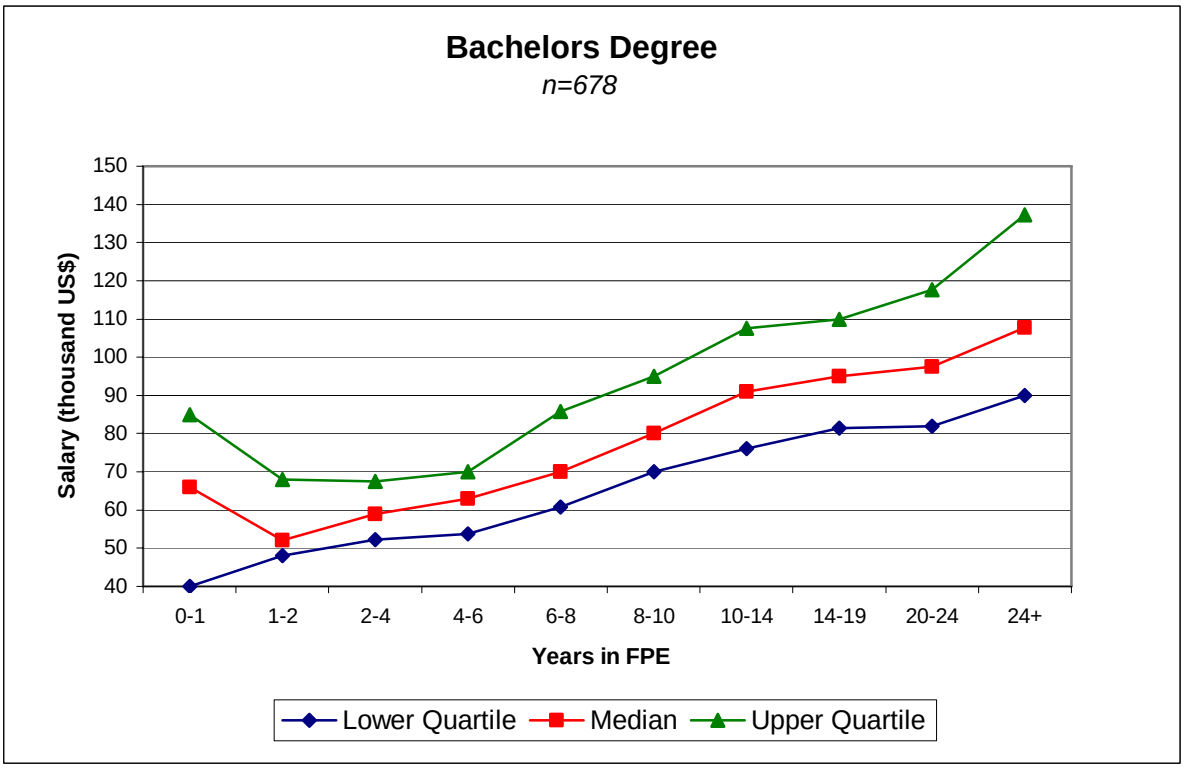
Salary is also influenced by location. Graph 2 shows the salary results for those respondents who live in the United States, comprising of 79% of total respondents. This number is lower than that for those who reported working in the United States because some respondents did not report a salary. Again, excluding the group 0-1 years' experience in fire protection engineering, income including bonuses increased as respondents years' experience in fire protection engineering increased. The median income in 2004 for respondents in the United States who had 1-2 years' experience was $56,000. For those with 24 or more years' experience in fire protection engineering, the median income was $110,000 (Appendix A, Table 2). Unfortunately there was insufficient data for the 13% of respondents who work outside of the United States to determine their median salaries as a function of years working in fire protection engineering.

Graph 2

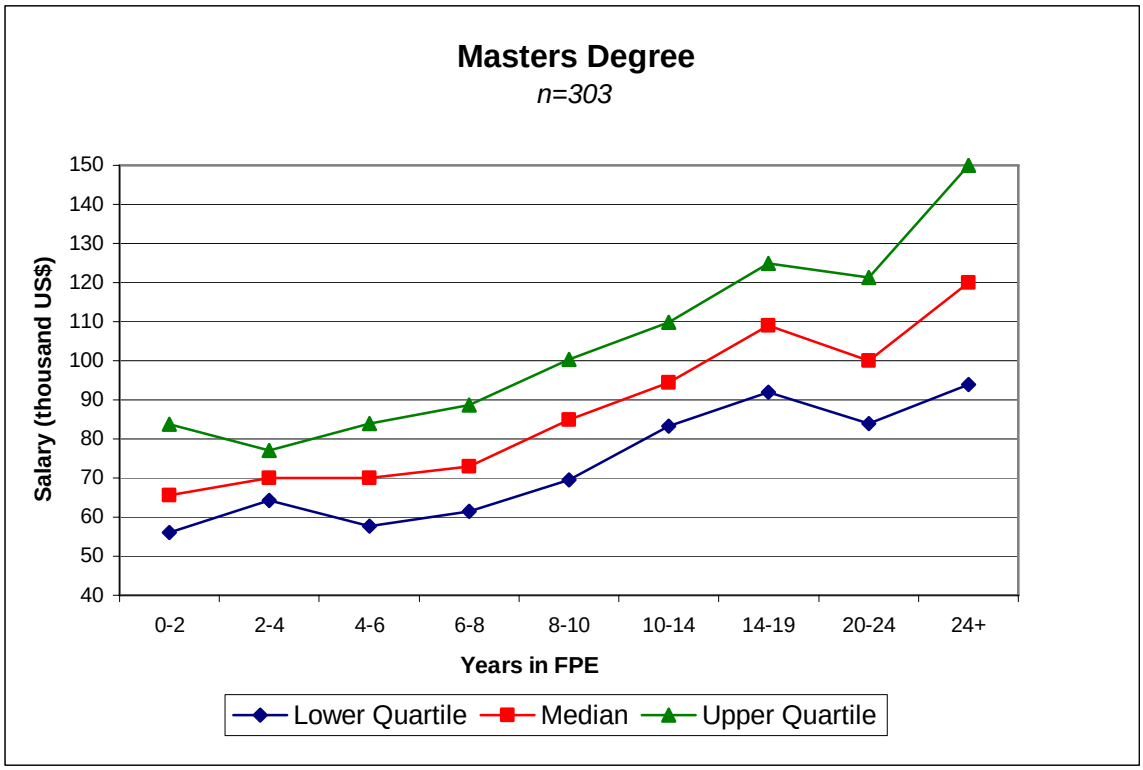


Education is another factor that influences a person's salary. Additional education increases ones overall earning power. Graph 3 illustrates the results of 2004 income as a function of years' experience in fire protection engineering for those with a Bachelors degree. For those respondents with 2-4 years' experience practicing fire protection engineering and who had earned only a Bachelors degree, the median salary was $59,000. For those respondents with 24 or more years' experience and a Bachelors degree, the median income in 2004 was $108,000 (Appendix A, Table 3). Not surprisingly, median income in 2004 was higher for those with a Masters degree. Graph 4 shows the results of 2004 income as a function of years' experience in fire protection for those with a Masters degree. Due to the small number of respondents in the categories 0-1 and 1-2 years of fire protection experience, these categories were combined. The median income including bonuses for those respondents with 2-4 years' experience was $70,000 while for those with 24 or more years' experience, the median salary was $120,000 (Appendix A, Table 4). Unfortunately, there was insufficient data to breakdown salary as a function of years' experience in fire protection for those with a Ph.D. degree, technology degree, and for those with no degree.

Graph 3

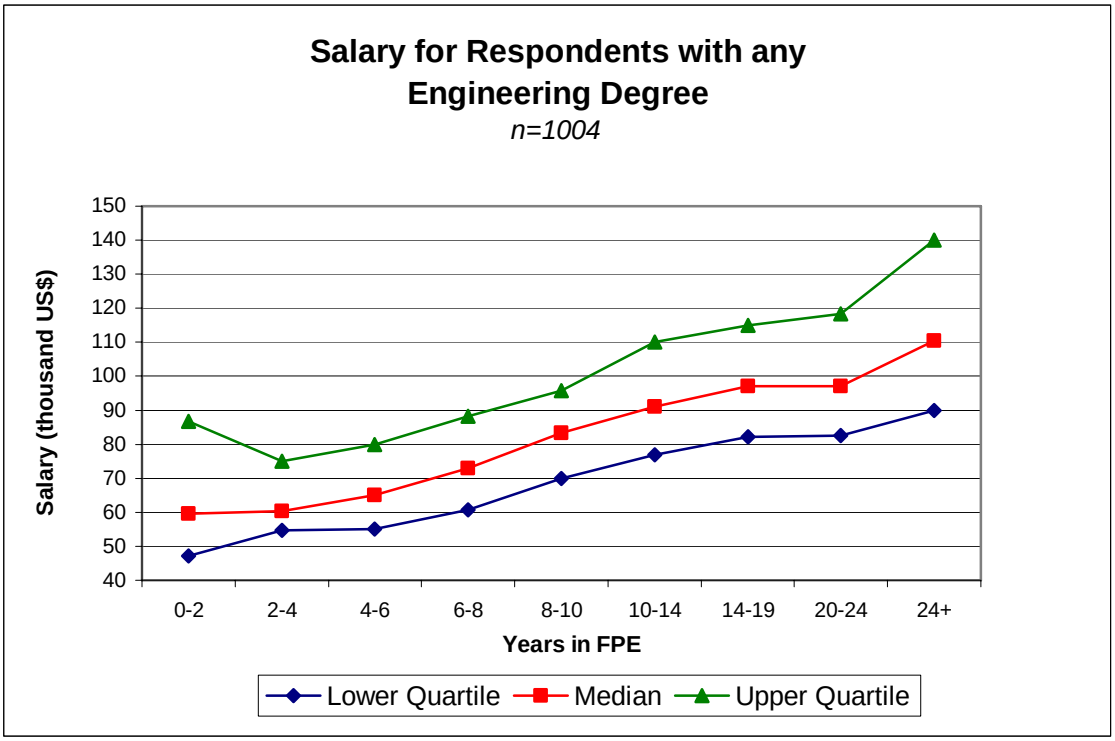


Graph 4

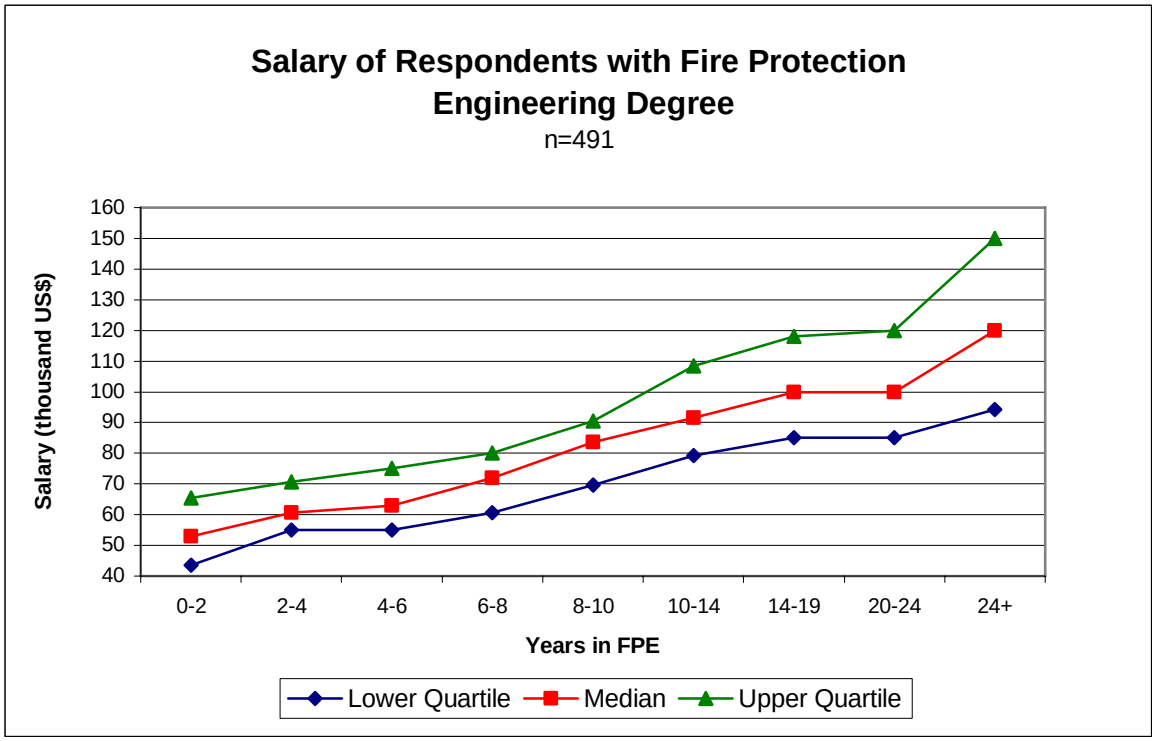

Masters Degree
n=303
Salary (thousand US$)
150
140
130
120
110
100
90
80
70
60
50
40
0-2
2-4
4-6
6-8
8-10
10-14
14-19
20-24
24+
Years in FPE
Lower Quartile
Median
Upper Quartile

Graph 5 shows the total 2004 income, including bonuses, for those respondents with any type of engineering degree as a function of years' experience in fire protection engineering (Appendix A, Table 5). Due to small numbers of respondents who reported having 0-1 and 1-2 years in fire protection, these categories were combined. Types of engineering degrees included fire protection, electrical, mechanical, safety, civil, chemical, industrial, nuclear, and aeronautical. For respondents with any type of engineering degree, the median salary in 2004 for those with 0-2 years' experience was $59,500, while for those with 24 or more years' experience it was $110,500. As expected with additional years' experience, a person's total salary increases. For those respondents with a fire protection engineering degree and between 0-2 years' experience, the median salary in 2004 was $53,000, while for those with 24 or more years' experience the median salary was $120,000 (Graph 6) (Appendix A, Table 6). Graph 7 shows respondent's salary as a function of years' experience in fire protection engineering for those respondents with an engineering degree *other* than fire protection engineering (Appendix A, Table 7). For those with 0-2 years' experience, the median salary was $74,000 and for those with 24 or more years of fire protection experience, the median salary was $106,000. Please note that this data in particular was heavily influenced by those people who stated that they had little experience in fire protection engineering but were older. Unfortunately there was insufficient data to breakdown salary as a function of years' experience in fire protection for those respondents with a non-engineering degree.

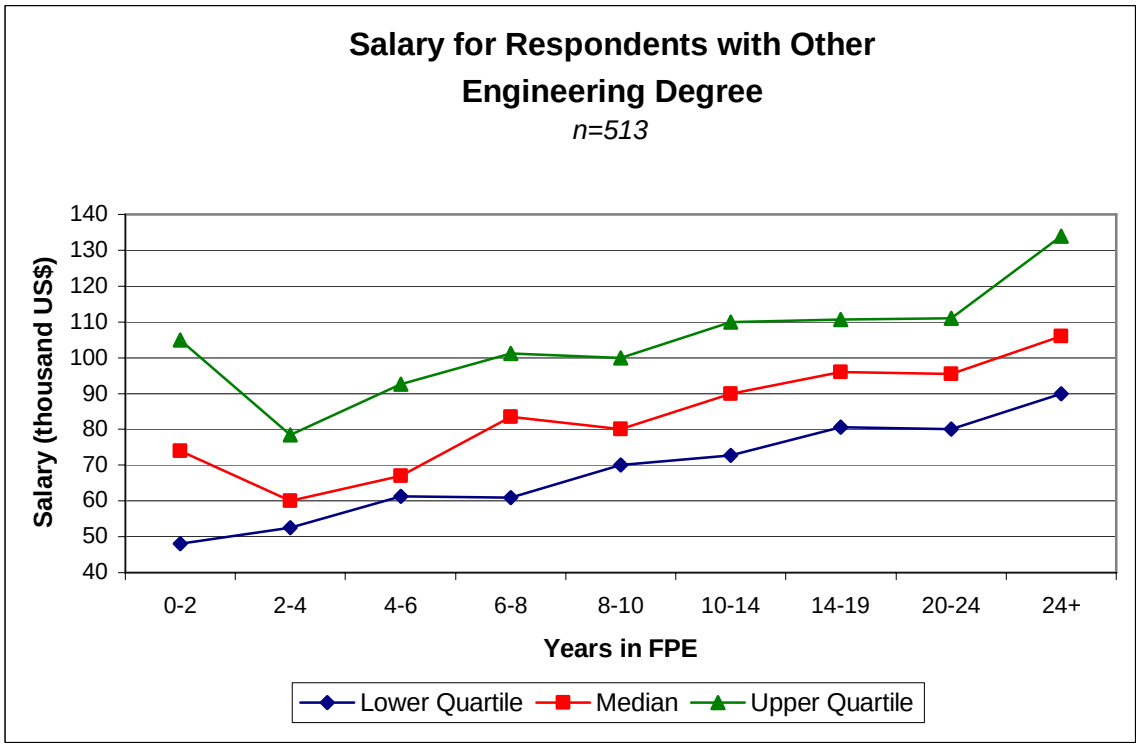
Graph 5



Graph 6

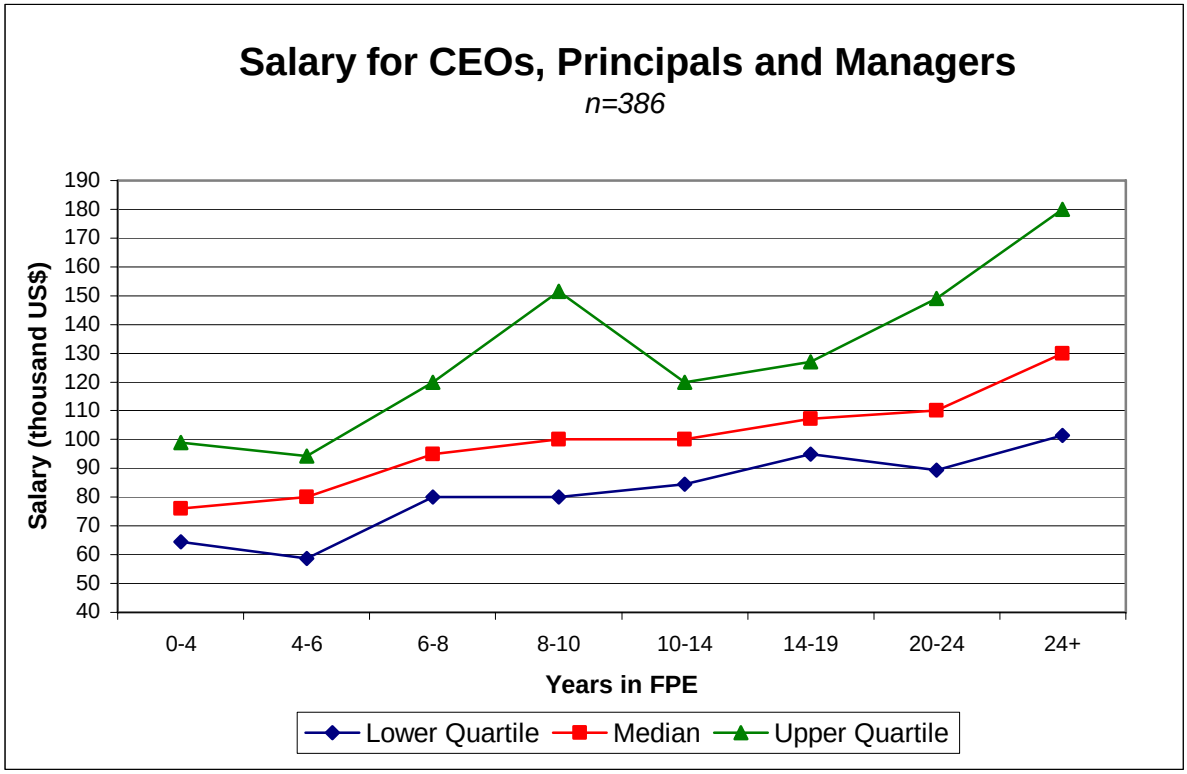


Graph 7



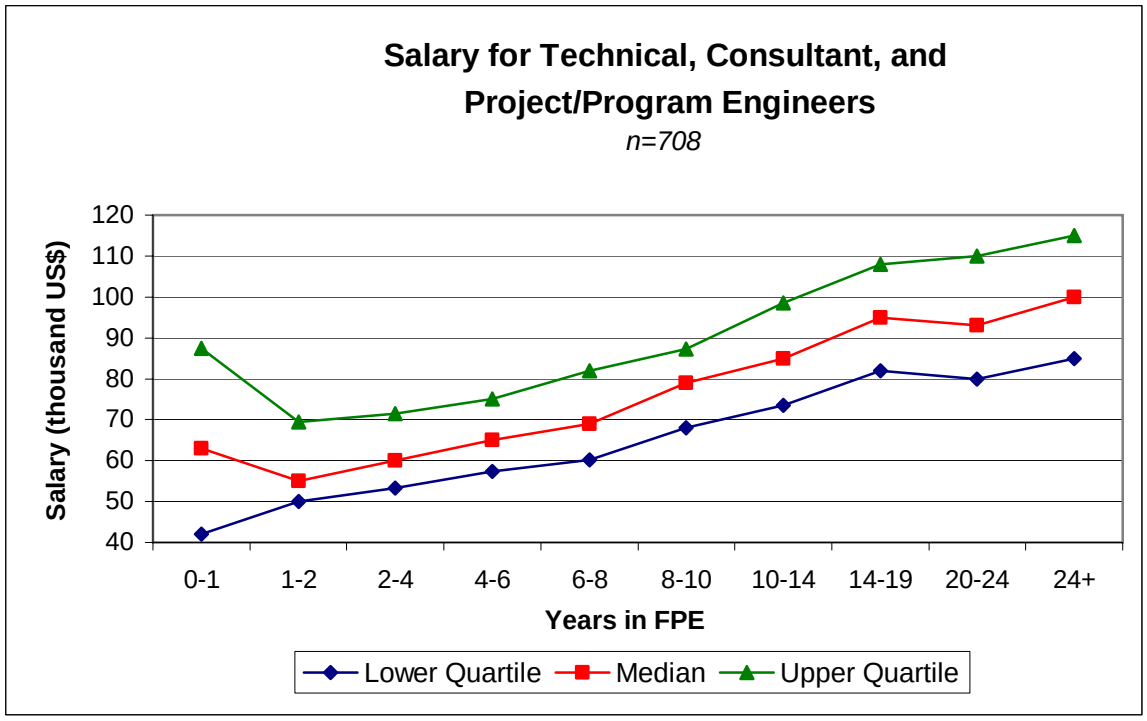
The type of position that a person holds also influences income. Graph 8 demonstrates the total 2004 salary, including bonuses, for respondents who are CEOS, principals or managers as a function of years' experience in fire protection engineering (Appendix A, Table 8). Thirty-four percent of survey respondents reported working as a CEO, principal or manager in their organization. Because these types of positions are generally held by people with numerous years' experience, the number of respondents in the groups with 4 years or less of experience in fire protection engineering was quite small. Therefore, the lower years' experience categories were combined. For those respondents who have 0-4 years experience in fire protection engineering, the median total salary in 2004 was approximately $76,000. The median salary increases as years of experience in fire protection engineering increases with those having 24 or more years earning a median salary of $130,000.

Graph 8



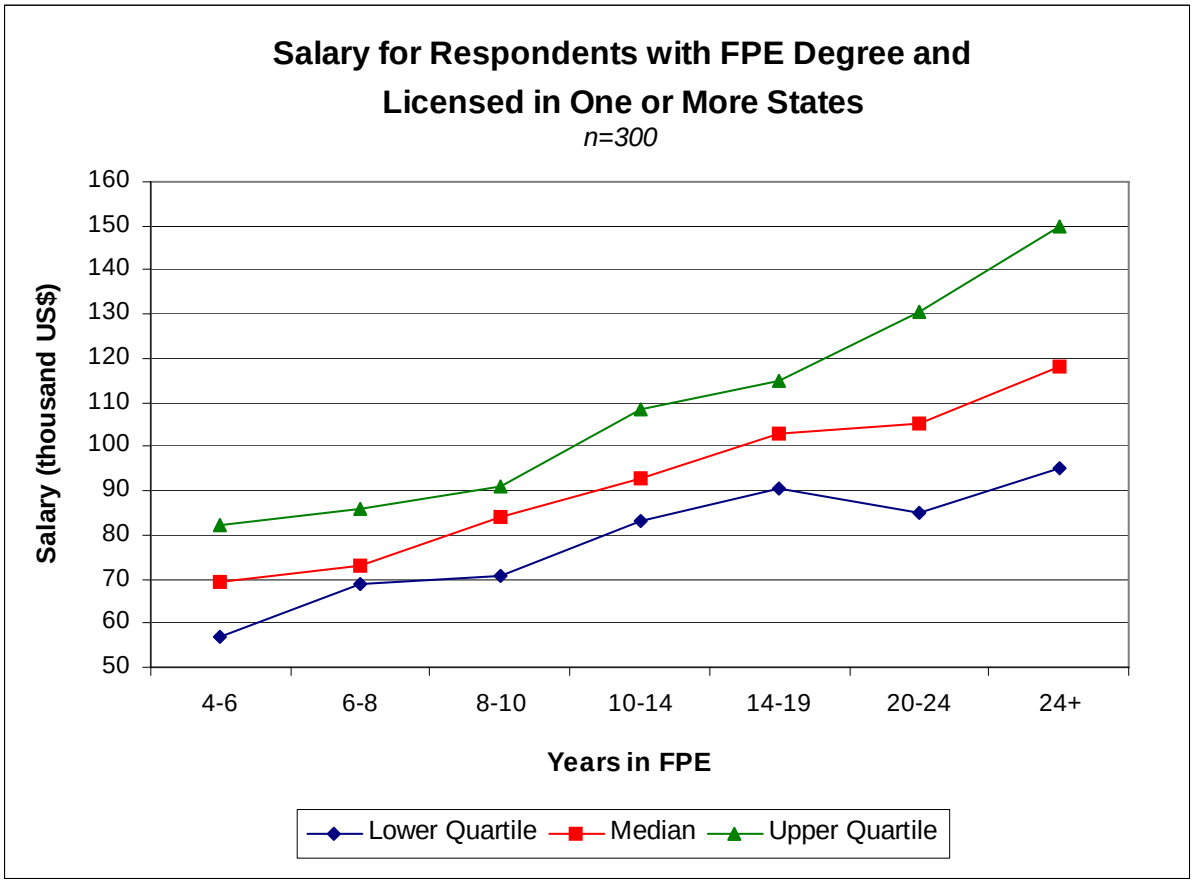
The majority of respondents' (62%) held positions as a consultant, project or program engineer, or a technician. Graph 9 demonstrates the total 2004 salary, including bonuses, for respondents who work as a consultant, project or program engineer, or in a technical position as a function of years' experience in fire protection engineering (Appendix A, Table 9). For those who have 0-1 years' experience in fire protection, the median salary was $63,000. The median salary for those respondents with 24 or more years' experience in fire protection engineering was $100,000. There was insufficient data to breakdown salary as a function of years' experience in fire protection for those respondents with a non-engineering related position.

Graph 9



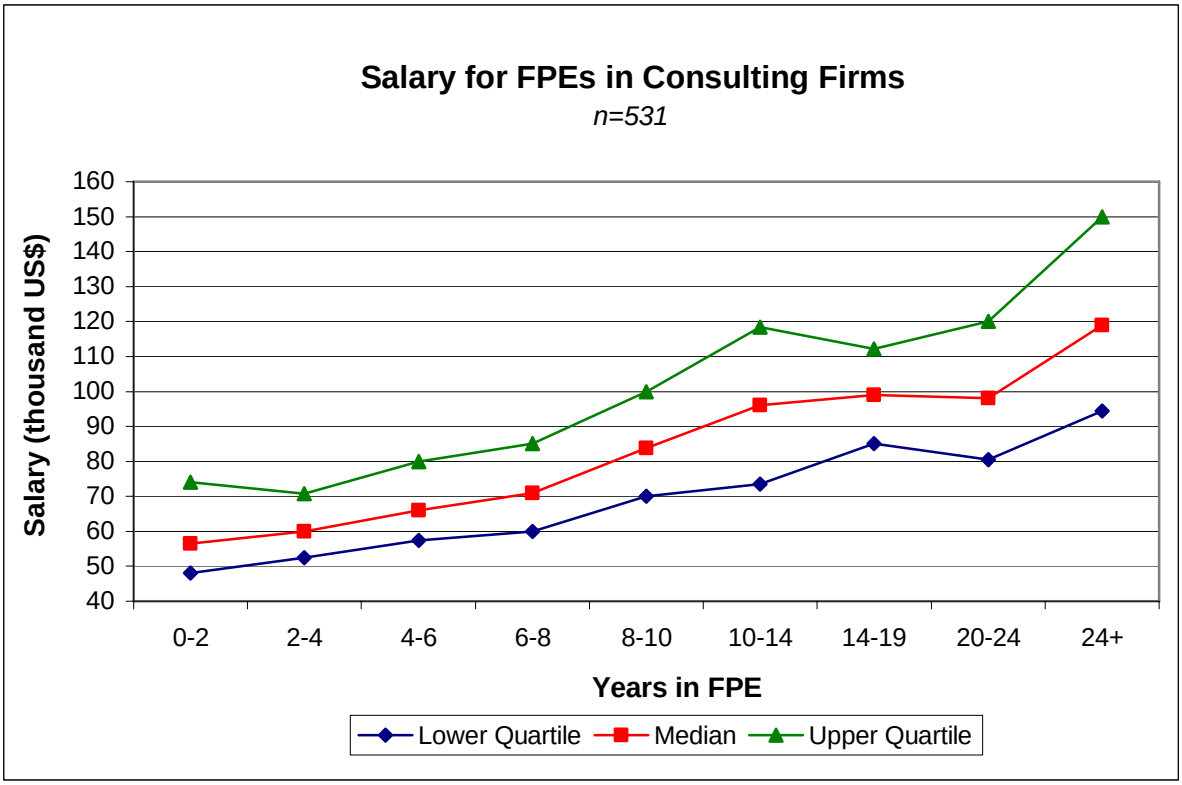
Being a licensed fire protection engineer can also influence salary. Graph 10 shows salaries for respondents with a fire protection engineering degree and who are licensed in one or more states as a function of years' experience in fire protection (Appendix A, Table 10). Because in general it takes several years to become a licensed engineer, the years' experience categories start at 4 years experience as a fire protection engineer. For those respondents with 4-6 years as fire protection engineer, the median salary was approximately $69,000. For those with 24 or more years' experience, the median salary including bonuses for 2004 was $118,000.

Graph 10

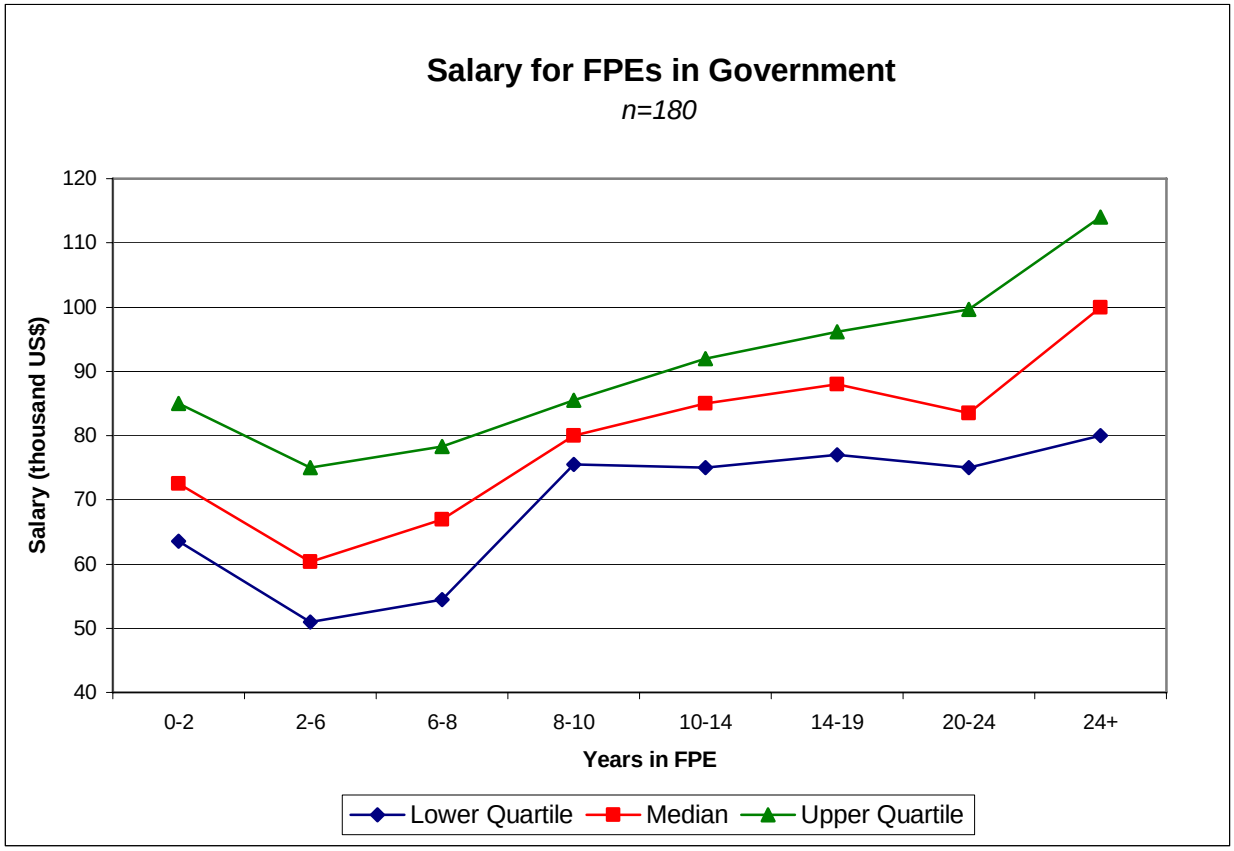


Analysis was also performed on respondents' salary based upon years working in fire protection engineering and by type of business employed in. The largest number of respondents work for a consulting firm (46%). Graph 11 shows the 2004 salary for workers in consulting firms as a function of years working in fire protection engineering (Appendix A, Table 11). The median salary for an engineer with 0-2 years' experience in fire protection was $56,500. For those respondents with 24 or more years' experience, the median salary was $119,000. Graph 12 shows the 2004 salary for respondents who work for a federal, state or local government as a function of years working in fire protection engineering (Appendix A, Table 12). For those respondents who work in the government and have 0-2 years' experience in fire protection, the median salary was $72,500. The median salary for those respondents with 24 or more years' experience was $100,000. Graph 13 shows the 2004 salary for respondents who work for the insurance industry as a function of years working in fire protection engineering (Appendix A, Table 13). The median salary for those respondents who work in the insurance industry and have 0-4 years experience in fire protection engineering was $57,400. For respondents who work in the insurance industry and who have 24 or more years experience in fire protection, the median total salary was $110,000. There was insufficient data for the remaining businesses to breakdown as a function of years as a fire protection engineer. The median total salary in 2004 for those who work in industry was $100,000; for respondents who work in education the median salary was $80,000; for those who work in research the median salary was $91,000; and for those who work in fire equipment manufacturing and installation, the median salary was $93,000.

Graph 11



Graph 12


Salary for FPEs in Government
n=180
Salary (thousand US$)
120
110
100
90
80
70
60
50
40
0-2
2-6
6-8
8-10
10-14
14-19
20-24
24+
Years in FPE
Lower Quartile
Median
Upper Quartile

Graph 13

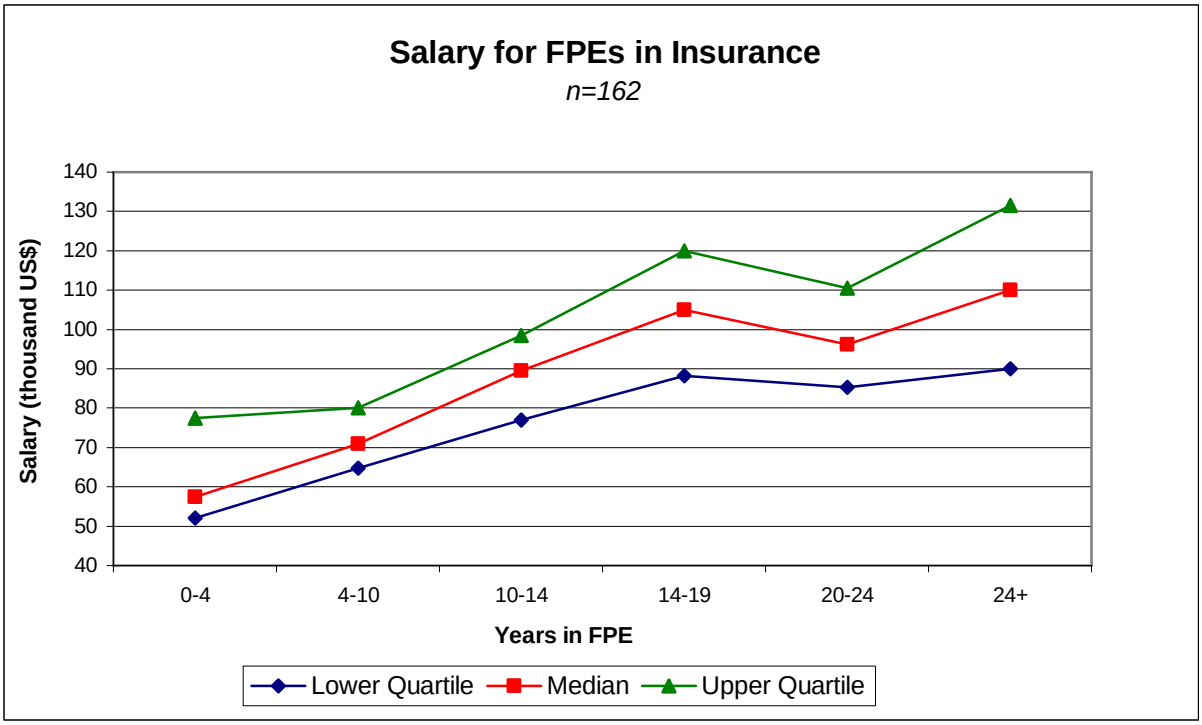

Salary for FPEs in Insurance
n=162
Salary (thousand US$)
140
130
120
110
100
90
80
70
60
50
40
0-4
4-10
10-14
14-19
20-24
24+
Years in FPE
Lower Quartile
Median
Upper Quartile

Chart 12 shows the percentage of respondents' 2004 salary which was comprised of a bonus. Thirty-eight percent of respondents received no bonus in 2004. Fifteen percent of respondents stated that between 1% and 5 % and 6% and 10% of their total salary was a bonus, respectively. Approximately 14% of respondents reported that 26% or more their total salary in 2004 was a bonus.

Chart 12

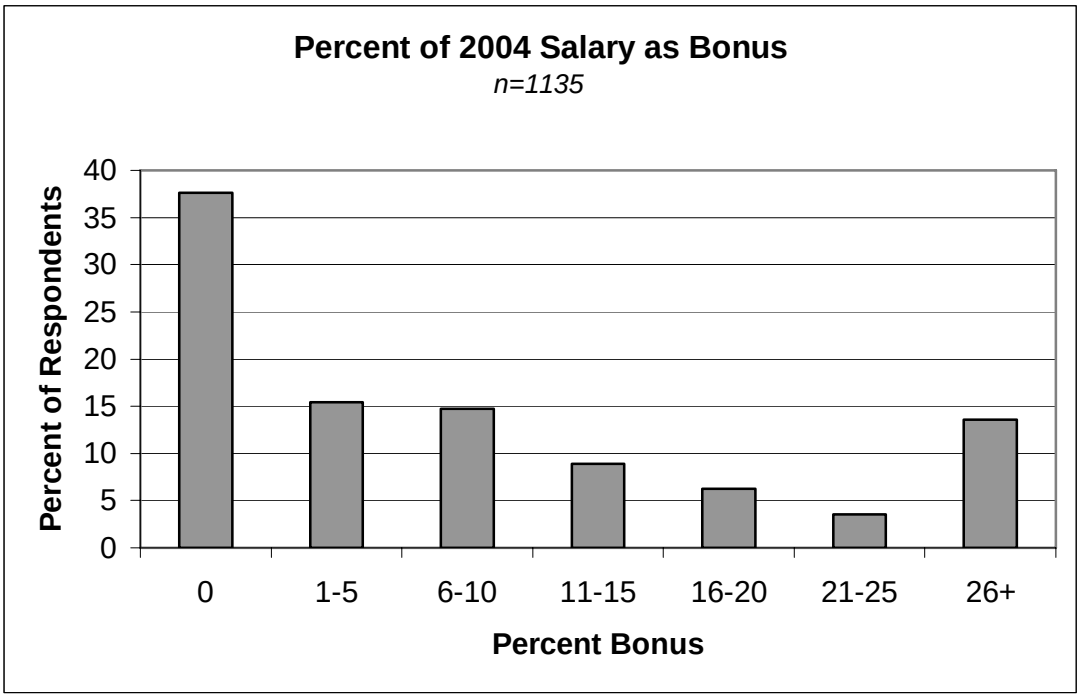
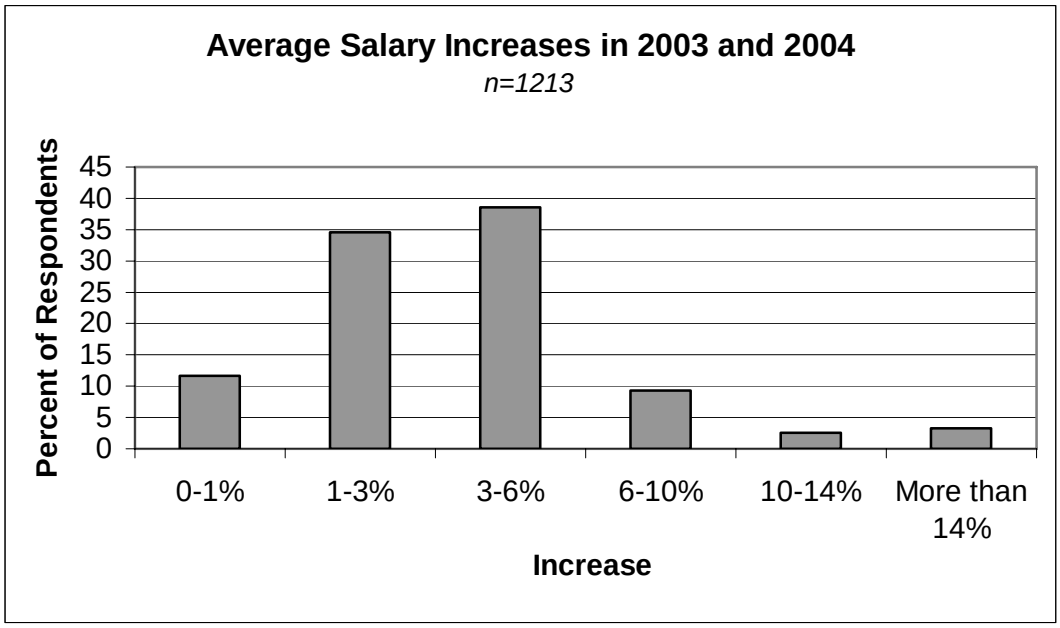


Chart 13 shows the average salary increase in 2003 and 2004 that respondents reported. Approximately 39% of respondents received an average salary increase in 2003 and 2004 of between 3-6%. This was closely followed by 35% of respondents who received between 1-3% salary increase in 2003 and 2004.

Chart 13



Appendix A

Table 1: Salary for all FPEs

Years' Experience in Fire Protection Engineering										
	0-1	1-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	53,250	49,550	54,500	55,000	60,524	70,000	76,000	82,750	82,000	90,000
Median	74,500	55,500	60,300	65,000	72,500	83,530	91,000	97,721	98,000	110,000
Upper Quartile	94,000	72,000	75,000	80,000	88,293	100,000	106,125	114,750	116,000	140,000

Table 2: Salary for FPEs in United States

Years' Experience in Fire Protection Engineering										
	0-1	1-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	57,750	49,550	54,500	57,850	61,500	72,000	76,000	85,000	83,000	90,000
Median	75,000	56,000	60,300	65,000	72,000	84,000	90,500	96,600	97,500	110,000
Upper Quartile	98,000	72,000	74,000	75,000	86,000	101,000	106,125	111,500	114,875	140,000

Table 3: Salary for FPEs with Bachelors Degree

Years' Experience in Fire Protection Engineering										
	0-1	1-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	40,000	48,100	52,250	53,750	60,750	70,000	76,000	81,500	82,000	90,000
Median	66,000	52,000	59,000	63,000	70,000	80,000	91,000	95,000	97,500	107,749
Upper Quartile	85,000	68,000	67,500	70,000	85,750	95,000	107,500	110,000	117,600	137,250

Table 4: Salary for FPEs with Masters Degree

Years' Experience in Fire Protection Engineering									
	0-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	56,000	64,300	57,700	61,524	69,588	83,250	92,000	83,875	94,000
Median	65,500	70,000	70,000	73,000	85,000	94,500	109,000	100,000	120,000
Upper Quartile	83,750	77,000	84,000	88,625	100,250	109,875	125,000	121,250	150,000

Table 5: Salary for FPEs with Any Engineering Degree

Years' Experience in Fire Protection Engineering									
	0-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	47,250	54,750	55,000	60,683	70,000	76,887	82,200	82,557	90,000
Median	59,500	60,300	65,000	73,000	83,265	91,000	97,000	97,000	110,500
Upper Quartile	86,750	75,000	80,000	88,195	95,750	110,000	115,000	118,400	140,000

Table 6: Salary for FPEs with Fire Protection Engineering Degree

Years' Experience in Fire Protection Engineering									
	0-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	43,500	55,000	55,000	60,750	69,588	79,250	85,000	85,000	94,250
Median	53,000	60,650	63,000	72,000	83,649	91,500	100,000	100,000	120,000
Upper Quartile	65,500	70,750	75,000	80,000	90,500	108,375	118,000	120,000	150,000

Table 7: Salary for FPEs with Other Engineering Degree

Years' Experience in Fire Protection Engineering									
	0-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	48,000	52,500	61,375	60,841	70,000	72,750	80,600	80,000	90,000
Median	74,000	60,000	67,000	83,500	80,000	90,000	96,000	95,500	106,000
Upper Quartile	105,000	78,500	92,625	101,250	100,000	110,000	110,750	111,100	134,000

Table 8: Salary for CEOs, Principals and Managers

Years' Experience in Fire Protection Engineering								
	0-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	64,500	58,750	80,000	80,000	84,500	95,000	89,500	101,500
Median	76,000	80,000	95,000	100,000	100,000	107,250	110,000	130,000
Upper Quartile	99,000	94,375	120,000	151,500	120,000	127,000	149,000	180,000

Table 9: Salary for CEOs, Principals and Managers

Years' Experience in Fire Protection Engineering										
	0-1	1-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	42,000	50,000	53,375	57,400	60,183	68,088	73,440	82,000	80,000	85,000
Median	63,000	55,000	60,000	65,000	69,000	79,000	85,000	95,000	93,000	100,000
Upper Quartile	87,500	69,500	71,500	75,000	82,000	87,250	98,500	108,000	110,000	115,000

Table 10: Salary for Respondents with FPE Degree and Licensed in 1+ States

Years' Experience in Fire Protection Engineering							
	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	56,800	68,922	70,500	83,250	90,500	85,000	95,000
Median	69,172	73,000	83,874	93,000	102,750	105,100	118,000
Upper Quartile	82,250	86,000	91,000	108,375	114,875	130,750	150,000

Table 11: Salary for FPEs in Consulting Firms

Years' Experience in Fire Protection Engineering									
	0-2	2-4	4-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	48,050	52,500	57,400	60,000	70,000	73,500	85,000	80,500	94,500
Median	56,500	60,000	66,000	71,000	83,874	96,000	99,000	98,000	119,000
Upper Quartile	74,000	70,750	80,000	85,000	100,000	118,500	112,206	120,000	150,000

Table 12: Salary for FPEs in Government

Years' Experience in Fire Protection Engineering								
	0-2	2-6	6-8	8-10	10-14	14-19	20-24	24+
Lower Quartile	63,500	51,000	54,500	75,500	75,000	77,000	75,000	80,000
Median	72,500	60,300	66,961	80,000	85,000	88,000	83,500	100,000
Upper Quartile	85,000	75,000	78,348	85,500	92,000	96,177	99,694	114,000

Table 13: Salary for FPEs in Insurance

	Years' Experience in Fire Protection Engineering					
	0-4	4-10	10-14	14-19	20-24	24+
Lower Quartile	52,000	64,750	76,911	88,250	85,250	90,000
Median	57,410	71,000	89,500	105,000	96,250	110,000
Upper Quartile	77,500	80,000	98,500	120,000	110,500	131,500