Modeling Early Career Salary Patterns:

The Influence of the Co-op Experience

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Long-term salary benefits have accrued to those obtaining a college degree, particularly in times of strong economic activity (Blau and Duncan, 1964). In periods of economic downturns or when the supply of college graduates outstrips demand, salary benefits shrink causing a convergence between salary outcomes of high school and college graduates (Freeman, 1975, 1976, and Rumberger, 1984). The turbulent restructuring of the 1980's eliminated many high paying blue collar positions (usually held by high school graduates or non-completers). The salary differential widened significantly (Office of Employment Projections, 1992); a gap that continues to widen (Kominski and Sutterlin, 1992) in spite of the terrible labor market for college graduates since ~~1990~~ 1980's.

Within the college population, economic benefits are not equally distributed. Some academic majors, such as engineering, accounting, and other technical areas, generate significantly higher starting salaries than other degrees in the social sciences, natural sciences and humanities (Gardner and Hwang, 1988a). Rumberger (1984) has argued that these salary advantages persist over time: those ahead stay ahead. The dynamics of the labor market and individual experiences provide exceptions but in general, engineers, medical/health services, and specialty business graduates remain ahead of all other academic majors throughout their careers. The gap may narrow but does not necessarily close.

Do salary advantages exist within a specific field? A general assumption holds that graduates from the same field possess the same portfolio of skills and face similar labor markets, assuming all other characteristics (employer and personal) have been held constant. Later salary differences can be largely attributed to personal attitude and organizational differences. Yet, differences in starting salary have been found for students who have augmented their academic program with experiential learning experiences. Both Siedenberg (1990) and Gardner, Nixon and Motschenbacher (1992) have demonstrated that co-op participation can have strong impacts

on salary outcomes. Thus, within field differences do occur from experiences that contribute to the enhancement of economic benefits associated with obtaining a college degree.

Recent concerns over the changing economic environment have raised questions over the long-term payoff for participation in cooperative learning programs. Does, in fact, the starting salary advantage persist throughout work life? If the answer is no, when do co-op and non-co-op salaries converge? No research has been conducted on these questions. The purpose of this article is to explore these questions using information obtained from a group of college engineers who graduated between 1979 and 1990.

STARTING OUT

From Gardner's et al (1992) work on the starting salaries of engineers, a picture emerged that depicted co-op students who completed a year of co-op (three experiences of four months each) held a decided salary advantage over other engineering students, regardless if these latter students had obtained work experience through internships or summer employment. The salary differential translated into $800 (adjusted to 1979 dollars); an advantage Rumberger would expect to be ~~present~~ persist.

Hypothesis 1: Co-op graduates would hold their salary advantage throughout their early careers.

Engineering major was found to influence starting salary with the three dominant fields of electrical, mechanical, and chemical, commanding the highest offers (Gardner, et al., 1992). Co-op's impact on salaries varied among the majors. Co-op experience had little influence on such fields as civil engineering, computer science, and general engineering, but had a strong influence in electrical, mechanical, and chemical engineering.

Hypothesis 2: The fields of electrical, mechanical, and chemical would hold their salary advantage throughout early careers.

Hypothesis 3: Within specific engineering fields, co-op participation will continue to have a positive influence on salary.

Gender did not affect starting salaries. In other words, men and women left the university with approximately the same salaries. Any gender differences in overall average could be traced to the distribution of women across engineering majors. Women failed to be represented proportionately in the highest paying fields of electrical and chemical engineering (Gardner, P. and Hwang, H. 1988b). Co-op participation by women in these latter fields, plus mechanical engineering, paid off handsomely in higher salaries -- above those of men. Co-op did not greatly enhance salaries for men or women in other engineering fields (Gardner, et al., 1992).

Hypothesis 4: Men's and women's salaries would remain equal during early career.

Hypothesis 5: Women with co-op would hold their salary advantage.

One additional hypothesis was posed based on the observed changes in the organizational structure of many companies during this period (downsizing, rightsizing, etc.). Graduates in career paths prior to restructuring would be found in traditional, hierarchial careers; career paths more likely to reward experiential learning.

Hypothesis 6: Co-op graduates from the period 1979-81, prior to the period of major organizational restructuring, would hold the largest advantage in salary.

To test these hypotheses, a salary model was proposed that with regression analysis controlled for the effects of selected independent variables which allowed the impact of experiential learning, gender, or academic major to be isolated. Modifying the model used by Siedenberg (1989) and Gardner, et al., (1992), the first step was to regress current salary against workforce participation (total number of months in the labor force), academic program, additional education, gender, and experiential learning experiences. During the second step

additional variables were included that controlled for organizational characteristics (size and type) and position description (level in organization and management). Job location was not included in either stage of the model.

METHODS

A group of engineers who graduated from Michigan State University between 1979 and 1990 were used in this study. These engineers were drawn from the pool of engineers used in our 1992 study of starting salary. This pool was augmented by engineers not surveyed previously to insure representiveness. For complete details on the construction of the sample refer to Gardner and Motschenbacher, 1993.

A survey was designed that documented the early career progression of an engineer. After an opening section that captured information on the status of the career, life satisfaction, and reflection on their academic career, a diary followed which allowed the respondent to provide detailed information on five significant job changes. Most of the attention was given to their first position and their current position with thorough questions on selected aspects of their employment. A work summary concluded the survey that tallied promotions, job changes, shifts in job responsibility, and time out of the workforce.

The survey was administered through the mail with the letter inviting alumni to participate from the Dean of the College of Engineering. Non-respondents were sent a second packet ten days after the initial due date. A total of 2,100 engineers were contacted (adjusted for bad addresses).

RESULTS

A total of 609 surveys were returned for a 30% response rate. Of these, 600 were complete enough to use in the analyses that follow. Missing data were present though the

distribution did not appear to be biased.

Sixty eight percent (68%) of the respondents were men. The median age was 31 years, ranging from 25 to 40. Approximately 65% were married or living with a partner; 32% were single; and 3% reported their marital status in transitions. More of the women, 67%, were married than men (64%). While 38% reported having children, slightly more women reported having no children: 50% of those married or having a partner versus 43% of similar men.

For 70% of the respondents their bachelor's degree in engineering was the highest level of education obtained. Proportionally more women, 74%, have chosen at this time not to pursue additional education. Seventeen percent (17) have earned a master's degree in engineering, 10% have earned degrees in business administration; and 3% doctoral or professional degrees. Women were more likely to pursue Ph.D. degrees than men who earned professional degrees.

The distribution of respondents across engineering disciplines accurately reflect the enrollment and graduation patterns reported by the College of Engineering. Mechanical engineering graduates represented 27% of the respondents, followed by civil and electrical engineering, 16%, and chemical engineering, computer science, and engineering arts with 11%. Several smaller programs included agricultural engineering and a group comprised of material science, mechanics, and operations research, each at 3%. Even though women have lower enrollment patterns in chemical, mechanical, and electrical engineering, only in electrical did they have a lower than expected appearance, only 8%. Men were distributed as expected, except in the area of general engineering when their numbers were low, 7%.

Approximately 21% of the sample obtained no engineering related work experience prior to obtaining their undergraduate degree. They may have worked, summers at camps or on-campus in cafeterias for example; but their experiences involved no expert practice in engineering. For those with work experience, 35% had gained experience through co-op

participation; 31% from summer employment; and 13% through internships. A few respondents indicated multiple work experiences, commonly summer and co-op. Those respondents were classified as co-op throughout the analyses.

Starting salary. Respondents were asked to provide the starting salary for their first job and their salary at the time they left this position. The answers lacked clarity in that some respondents provided only one end of the range (usually their salary at the time they left the position) or an average over their period of tenure. These reporting errors make it difficult to standardize starting salaries to obtain a reliable picture of economic benefits at the start of their work experience.

Using the best estimates of starting salary and indexing to 1979 dollars, co-op participants who completed three terms (one year) of co-op[1] realized the highest initial salaries at $20,170 (see Gardner, et al., 1993). Co-ops with fewer than three co-ops started at $19,200 followed by internships ($18,910), summer employment ($18,800) and those with no experience ($18,610). The co-op with three experiences was significantly different from the no experience group at the .05 level. In a regression model of starting salary, co-op participation was modestly significant after controlling for engineering major and gender, with a significance of .10.

A better understanding of the relative starting position of co-op and non-co-op students is gained by viewing the findings of Gardner, et al., 1992. In the 1992 study accurate starting salaries was captured for each respondent. After controlling for engineering major, job location, graduation date, gender, and grade point averages, co-op experience was added to the regression

[1]In our study of starting salaries (Gardner, et al., 1992), a distinction between co-op participants who completed a year of co-op (three quarters for their institution) and co-op participants with one or two quarters of co-op was found to be important. This distinction was utilized in the analyses for this report.

model. Co-op experience contributed significantly to starting salary with the t-statistic significant at the .03 level. Further examination found that co-op experiences benefitted women as compared to men, especially in electrical, chemical, and mechanical engineering; men from computer science and operations research reported large gains from having participated in co-op.

Current salaries. The average current salary for all respondents was $42,587 (sd 10,839). Averages ranged from a high of $46,722 for co-ops with more than three experiences to a low of $42,587 for those engineers with no experiences (Table 1). The standard deviations suggest that salaries within all groups have begun to spread out, particularly among co-op respondents. Without controlling for any other factors, analysis of variance for current salary found the F statistic approaching significance ($p = .075$). A one way analysis, relaxed to a .05 level for the range tests, revealed no significant differences among the groups.

Designating the number of years in the labor market as a covariant in the analysis of variance, the operation produced significant results for the covariant ($F = 137.01$, .000) and the main effect for pre-graduate work experience ($F = 2.54$, .039). In other words, after controlling for number of years of work experience, a difference was found between co-ops, interns, summer employment, and no work experience. A regression model which used four dichotomous variables (<2 co-ops, >3 co-ops, interns, and summer employment) and work experience as independent variables, revealed that >3 co-ops, summer employment, and interns were significantly higher than the no experience group. The <2 co-op group was not statistically different in salary from the non-experience group. Regression statistics are found in Table 2, Model 1.

A revised regression model held both no experience and less than two co-ops constant. The results were consistent with greater than three co-ops and interns being significantly significant (.02 level). After controlling for time in labor market; summer employment

approached significance with a t-statistic slightly larger than .05. For the next set of analyses, no experience and less than two co-ops have been grouped to form a dichotomous variable, ALEXP (1 = no exp/<2 co-ops, 0 = all others).

These initial results suggest that pre-graduation work experiences have a long-term impact on salaries. However, to ascertain if co-ops and internships in fact influence salaries, a regression model that included a broader set of independent variables was specified. A basic model including the key variables of academic major, education level, and gender were included along with labor market experience and ALEXP. Labor market experience was converted to months and adjusted for any time spent out of the labor force for health, unemployment, or family responsibilities. After running this model, several industry variables were added to capture position in the company, manufacturing sector and organizational level. The independent variables are defined in Table 3 and regression statistics are located in Table 2, Models 2 and 3.

Model 2 indicates that all the variables except engineering program (PROG) contributed significantly to the explanation of the variance in current salaries. After controlling for labor market experience which contributes $131 for each month ($1,572 per year), post-baccalaureate education (EDAT) strongly entered the model. For those who have earned an advanced degree, the impact on salary exceeded $6,600. For those with pre-graduation work experiences, ALEXP's beta coefficient indicated that salaries were $2,464 higher. The final variable entered, SEX, found women falling behind men in salary by $2,086. This latter finding presented the most noticeable difference from our starting salary model (Gardner, et al., 1992), except for the absence of the engineering program variable. The academic major affects disappeared as graduates from computer science, civil engineering, and engineering arts made significant salary gains during their early careers.

In Model 3, a group of organizational variables were entered with four of the Model 2 variables. PROG was eliminated because it proved to be insignificant throughout the remaining analyses. All seven variables contributed significantly to current salary variance. For those who have moved into management position, the payoff was higher salaries by $3,109. Simply moving up in the organization also aided salaries by $668 for each level. Engineers in the manufacturing sector received higher salaries by $2,168. The original four independent variables all remained significant. After entering the MANAGE variable, the SEX variable moved from the .05 to .01 levels of significance and the salary differential increased to $2,445 (or nearly $400). Pre-graduation work experiences remained significant though it slid in significance from .01 to .02 and decreased slightly in magnitude to $2,270 (about $200).

At this point, the regression model supported Hypothesis 1, in part. While co-ops with three experiences did not stand above all other pre-graduation work groups, the composite group including co-op >3, interns, and summer employment had significantly higher salaries than those with no experiences and <2 co-ops.

Results from this model refuted Hypothesis 2 as electrical, mechanical, and chemical engineers failed to maintain their salary advantage. In particular civil engineers and computer scientists made significant gains in salary. Hypothesis 4 also failed to be supported as women's salaries fell significantly behind men.

Engineering Major and Co-ops. The average current salary of engineers was nearly the same irrespective of academic major. The big advantage enjoyed by mechanical, chemical and electrical soon disappeared. Chemical engineers remained on top, as indicated in Figure A, but the difference had decreased to about $3,500. Analysis of variance, holding total work experience as a covariant, found a weak ($F = 2.02, .09$) comparison between salaries. When the comparison is made between the groups as defined by PROG, the difference was significant

(F=82.25, .00).

Figure A. Current Salaries According to Engineering Major ($)

	Engineering Arts Computer Science	Mechanical	Electrical	Chemical	Civil
Salary	44,310	44,690	43,800	48,270	44,800

In the regressions on salary, ALEXP failed to enter significantly for both groups at the .05 level though in both cases t-score approached significance (Model 1). Factors that significantly influenced salary included work experience (ADJWKEX) and education attained (EDAT), irregardless of major. Gender (SEX) was significant in the model of civil engineering, computer science, and engineering arts majors (Table 5).

When MANAGER, CORGLEV, and MANU variables are added in Model 2, ALEXP decreased in importance. The variable strongly influenced in both models was SEX. Once management position and level within the organization was accounted for, SEX was significant in both groups. Work experience and education were the two critical variables explaining the difference in salary. Being in the manufacturing sector and a manager also appeared in the model for mechanical, electrical, and chemical engineers. Because the addition of these variables in step 2 failed to improve the R^2s, Model 1 results were more appropriate in testing the hypothesis. The results, while suggesting a small impact of prior work experience on salary, are not strong enough to support hypothesis 3.

Men, Women and Co-op. The initial model of salary established that women have fallen behind men in terms of salary. For those women with co-op, the expectations were that these women would stay ahead of both men and women without co-op experience. A review of the means, presented in Table 5 indicated that women with co-op fall behind men, except for

those with no experience or internships; direct comparisons between co-op categories revealed that women fell behind men by $2,500 (<2 co-ops) to $4,500 (>3 co-ops). It appeared that man with co-ops earned stronger returns from their co-op experiences while women with co-op were no better off than women with other types of experiences.

Within gender group comparisons further substantiated this point. Analyses of variances with length of work experience specified as the co-variant found (1) for men that pre-graduation work experiences approached significance (F = 2.25, .06) and (2) for women that pre-graduation work experience was insignificant. This analysis was completed by the regression models of salary as defined previously with regression statistics found in Table 6.

In Model 1, engineering program was insignificant for both men and women. The strongest variable in both models was advanced education which contributed $6,771 for men and $6,531 for women. Length of time in the labor force was also significant adding $143 per month of experience for men and $107 per month for women. For each month of experience men captured approximately $36 (comparing the beta coefficients) more than women. An additional factor, ALEXP, entered significantly in the model for men. Men with these experiences continued to benefit by approximately $2,816; co-op was a particularly strong and contributed as indicated by the means in Table 5. Even though the regression coefficient for women indicated that women with pre-graduation experience benefitted by $1,450, the coefficient was insignificant.

Adding the position variables, MANAGER and CORGLEV, the organizational type, MANU, and size (LFSZ), the regression models changed especially for women. MANU proved to be insignificant in both models. While EDAT and ADJWKEX remained strong in both equations, and ALEXP for men (though the significant level dropped), it was level of position in the company (CORGLEV) and type of position (MANAGER) that were statistically important.

For men, CORGLEV played a key role, adding $2,148 for each level up the organizational hierarchy. This pattern was just reversed for women where $1,450 was lost for each step up the hierarchy. It was the type of position women held that influenced salary. If women were in management positions their salary benefitted by $9,218. Being in a management position had no effect on men's salaries. Men benefitted from movement up the hierarchy; women benefitted from proper placement within the hierarchy. Organization size (LFSZ) failed to enter significantly though it approached significance for women. The sign of the regression coefficient indicated that women's salaries appeared to benefit in bigger companies while men benefitted from being in smaller companies. If size was included in the first model, prior to MANAGER and CORGLEX, LFSZ entered significantly at the .05 level with a regression coefficient of .768. Larger companies potentially offer women more opportunities for movement into management. Men find more rewards in smaller companies. Size may help to explain the direction for CORGLEV and MANAGER in Model 2.

Labor Markets and Co-ops. Starting salary patterns showed that co-op participants held a decided salary advantage from the late 1970's to the mid 1980's before salaries began to converge. It was speculated that changing economic conditions (restructuring) were influencing salary development. The sample was broken down into four labor market periods: (1) 1978 to 1981 with only a little restructuring and a good college labor market; (2) 1982 to 1985 with only a little restructuring and a weak college labor market; (3) 1986 to 1988 increasingly more restructuring and a good college labor market; and (4) 1989 to 1991 major restructuring and a very weak college labor market. Analysis of variance comparisons were made between these groups within each time period.

The mean current salaries are found in Table 7. As expected, salary averages steadily increase over time from $37,380 in the recent period (1989 to 1991) to $52,270 in 1978-1981.

These were differences between group salary means -- in all cases those with pre-graduation work experiences exceeded those with no work experience. However, the F statistic was only significant for the 1982-1985 period.

Regression of the five initial variables on salary was run. The results, found in Table 8, captured approximately 20% of the variance in each year (R^2s). For the most recent graduates, obtaining an advanced degree immediately boosted salary by $5,178. The strong influence of EDAT contributed to the negative sign on ADJWKEX which was opposite the expected direction. Engineering program (PROG) was also significant (.05 level); with the negative coefficient, mechanical, electrical, and chemical earned higher salaries. ALEXP approached significance at the .10 level.

With the exception of ADJWKEX, none of the variables contributed to explaining the difference in salary for the 1986-88 graduates; not even education played a significant role. For each month of work experience, salaries increased $304. Salaries are closely bunched, as the means suggest.

By 1982-1985, advanced degrees really contributed to salary ($7,812) as did work experience ($253 per month). The only other variable that appeared was ALEXP as those with pre-graduation work experience gained $3,269, though the t-statistics only approached significance.

For those who have been working the longest (entry prior to 1982), SEX entered as a highly significant variable. Men earned substantially more than women ($8,580) after controlling for the other variables. Also significant in this model were EDAT (advanced degree worth $8,999 in additional salary) and ADJWKEX (each month of work experience worth $168).

When the position and organization variables were added (Model 2, Table 8), models for the periods 1989-91 and 1982-85 were influenced. The most recent graduates (1989-91), being

hired in as a manager, boosted salary ($5,289) replacing EDAT in the equation. More significant were SEX which say men earn $2,502 in additional salary and CORGLEV where those at lower levels actually earned more. For the 1982-85 group, ADJWKEX and EDAT remained highly significant and were joined by CORGLEV where each move up the organization garnered $2,722.

In reviewing Table 7, the group with no work experience received the lowest salaries in all periods. ALEXP was re-specified so that the no experience group was compared to all others. In re-running the analysis only the model for the time period 1989-91 changed when ALEXP was significant at the .03 level or less. Those with no relevant pre-graduation work experience lagged behind the other engineers by approximately $5,006, all other things being constant. The significance levels for several other independent variables also changed, especially PROG and ADJWKEX.

From these analyses, hypothesis 6 was not strongly supported. A pattern emerged that corresponds to labor market conditions at the time graduates entered the market. In the periods when labor markets were weak, 1989-91 and 1982-85, ALEXP approached significance. When employers can be highly selective in their hires, they take into consideration factors that can distinguish candidates, such as co-op. In good markets with plentiful jobs, few factors explain salary. Even though ALEXP did not appear to be significant, the size of the regression coefficients, except for 1986-88, suggest that pre-graduation work experience contributed from $2,400 (1989-91) to $3,798 (1979-81) to current salary. Thus, it was not clear when, or if, the salary gap between co-ops and non-co-ops has closed.

DISCUSSION

The intention of this project was to determine if the co-op experience influenced salaries

through early career. Ahead at the start, co-ops were expected to stay ahead based upon findings on college salary outcomes (Rumberger, 1984). In the overall model of current salary, co-op experience failed to emerge solely ahead of all other groups. What was clearly demonstrated was the benefit of pre-graduation work experiences whether these experiences are co-ops, internships, or summer employment positions.

The group most likely to capture long term economic benefits from co-op (particularly) and other experiential learning activities was men. In both regression models for men, pre-graduation experiences were significant. On the other hand, women who had experienced strong starting salary enhancements from their co-ops found these experiences contributed little to salary development during early career. For women, position in the organization became the key determinant of salary.

The expected long term benefits to certain engineering majors failed to accrue. Engineering disciplines that had lagged behind mechanical, electrical and chemical, in terms of starting salary, quickly caught up. This movement may be partially explained by evidence that civil and general engineers and computer scientists made more job changes during this period (Gardner and Motschenbacher, 1993).

The critical question of when co-ops lose their salary advantage can not be precisely answered. The advantage does seem to persist, at least for men, during the first few years after graduation. It's possible that the pre-college work experience collapses with workforce participation. Additional examination through regression can probe into this possibility.

Pre-graduation work experiences impact on salary appears to be related to labor market conditions. The cyclical pattern where work experience flows from being important to not, then back again, parallels changing labor markets. For weak markets (1989-92 and 1982-85) the competition for available positions heightens with co-op graduates and others with practical

experience gaining an advantage because of their access to employers or their experiences stand out in a pile of somewhat similar remains. Where markets are strong (more jobs than graduates), not as much discrimination occurs as nearly everyone is assured a "good job."

Does the co-op experience have lasting impacts on those who participate? In terms of economic benefits, the results are mixed. Salary, however, is only one possible work related outcome that can be influenced by co-op. Research has shown co-op participants have different learning styles, higher levels of career maturity, and better understanding of work environments. Each of these dimensions positively influences work and life satisfaction that can not be solely measured in terms of salary.

Finally a number of future research issues emerges from these analyses. This cross-sectional, time series, study captured some of the dynamics that occur in early careers; yet, a longitudinal study would allow events to be monitored as they occur, permitting strong casual relationships to be charted. The type of graduates studied needs to be broadened to include graduates in fields that face different labor market conditions than engineers. Do students really understand what they want from a job, even after co-op? In what ways are various job characteristics and benefits changed with work experience? How does co-op influence a student's orientation to work over early career? Further investigations into such questions as these and many more, especially with more populations and setting would be timely and warranted.

Table 1: Average Current Salaries by Work Experience ($)

	n	Average Salary	Standard Deviation
No experience	109	$42,587	10,839
< 2 Co-ops	63	$43,508	12,961
> 3 Co-ops	126	$46,722	14,877
Internships	70	$43,629	11,099
Summer employment	163	$45,939	13,075

Table 2: Regression Statistics for Current Salaries: Betas and t-statistics

	Model 1		Model 2		Model 3	
	B	t	B	t	B	t
Labor force exp	1.59	11.68*				
< 2 Co-ops	2.45	1.34				
> 3 Co-ops	3.94	2.63*				
Interns	4.88	2.73*				
Summer	3.11	2.19**				
EDAT			-6.615	-6.50*	-6.638	-6.5*
PROG			- .534	- .56	--	--
SEX			-2.086	-2.03**	-2.445	-2.43*
ADJWKEX			.131	12.38*	.110	9.73*
ALEXP			-2.464	-2.429*	-2.27	-2.24**
MANAGER					3.109	2.72*
CORGLEV					.668	2.29*
MANU					2.168	2.31**
CONSTANT	✓31.084	21.07*	40.643	29.367*	37.519	24.38*
R2	.22		.31		.34	

*Significant at < .01 **Significant at < .05

Table 3: Variable Definitions Used in Regression Models for Current Salaries:

Betas and t-statistics

EDLEV:	Education level attained	1 = BS only 0 = Advanced degree
PROG:	Academic program in engineering	1 = Civil, Computer Science, Engr Arts 0 = Mechanical, Electrical, Chemical
SEX:	Gender	1 = Female 0 = Male
ADJWKEX:	Total months in the labor force adjusted for absences for family responsibilities, unemployment and health reasons.	
ALEXP:	Pre-graduation work experiences	1 = none, <2 co-ops 0 = >3 co-ops, interns, summer
MANAGER:	Hold a managerial position	1 = yes 0 = no
CORGLEV:	Level within the organization (ten point scale with 5 as mid-level management)	
MANU:	Organizational orientation	1 = manufacturing 0 = other
LNSC:	Log of organizational size	

Table 4: Regression Coefficient for Model 1 According to Engineering Major Groups

	Mechanical, Electrical, Chemical		Civil, Computer Science, Engineering Arts	
	B	t	B	t
ADJWKEX	.117	8.02*	.150	9.68*
ALEXP	-2.260	-1.60**	-2.610	-1.79
EDAT	-5.591	-3.97*	-7.685	-4.94*
SEX[1]	- .967	- .672	-3.527	-2.40*
CONSTANT	40.645	22.14*	39.915	20.52*
R^2	.28		.39	

*Significant at $< .01$
[1]In the complete model, gender was significant in both groups; management was significant (.05) for mechanical, electrical and chemical.

Table 5. Current Salary for Men and Women According to Pre-Graduation Work Experiences

Experience	Men[1]	Women[2]
None	$42,890	$41,880
<2 Co-ops	$44,220	$41,590
>3 Co-ops	$47,930	$43,440
Interns	$42,800	$43,930
Summer Employment	$47,140	$44,070

[1]Within group ANOVA: Work experience (F = 118.76, .000) group (F = 2.25, .06)
[2]Within group ANOVA: Work experience (F = 24.271, .000) group (F = .609, .657)

Table 6. Regression Coefficients for Two Models of Salary for Men and Women

	MEN				WOMEN			
	MODEL 1		MODEL 2		MODEL 1		MODEL 2	
	B	t	B	t	B	t	B	t
EDAT	-6.771	-5.62*	-5.525	-3.77*	-6.365	-3.11*	-5.882	-2.49*
PROG	.324	.29	----	----	-2.145	-1.19	----	----
ALEXP	-2.816	-2.41*	-2.805	-1.98**	-1.450	- .71	-1.153	- .51
ADJWKEX	.143	11.28*	.16	6.56*	.112	5.62*	.111	4.41*
MANAGER			-3.06	-1.74			10.641	4.72*
CORGLEV			2.231	4.96*			-1.525	-2.70*
MANU			.598	.41			.043	.019
COMPANY SIZE (LN)			- .051	-.20			.600	1.66
CONSTANT	39.590	24.90*	35.731	11.75*	40.466	15.56*	35.991	6.83*
R^2	.33		.39		.25		.38	

*Significant < .01 **Significant < .05.

Table 7. Current Salaries for Work Experience by Labor Market Entry Period ($ AVERAGES)

Labor Market	n	All	None	<2 Co-op	>3 Co-op	Intern	Summer
1989-1991	121	37,380	35,000	35,610	39,680	38,830	37,000
1986-1988	151	41,650	39,880	43,930	41,900	41,850	41,890
1982-1985*	139	48,400	44,790	46,000	50,660	58,710	48,950
1978-1981	120	52,270	47,140	54,690	52,470	53,630	52,270

*ANOVA significant at .03.

Table 8. Period of Labor Market Entry - Regression Coefficients and t-Statistics

	1989-91				1986-88				1983-85				1979-82			
	Model I		Model II		Model I		Model II		Model I		Model II		Model I		Model II	
	B	t	B	t	B	t	B	t	B	t	B	t	B	t	B	t
SEX	-1.149	-.78	-2.502	-1.12*	-.488	-.32	-1.388	-.81	1.944	.92	.042	.019	-8.580	-2.96	-9.233	-2.81*
ALEXP	-2.401	-1.59	-3.749	-1.63	-.821	-.57	-.909	-.54	-3.269	-1.64	-.803	-3.68	-3.798	-1.27	-3.814	-1.19
PROG	-2.576	-1.86**			-.526	-.40			.039	.02			2.274	.82		
ADJWKEX	-.108	-1.70	-.143	-1.73	.304	5.07*	.339	4.76*	.253	4.00*	.231	3.24*	.168	2.95*	.138	2.22**
EDAT	-5.178	-3.08*	-2.171	-.70	-2.345	1.43	-.983	-.545	-7.812	-.396*	8.329	-3.94*	-8.999	-3.18*	-8.425	-2.71*
LFSZ			.448	1.07			-.328	-1.21			.011	.027			.681	1.18
CORGLEV			-2.146	-2.93*			.230	.433			2.722	4.04*			-.061	-.08
MANU			3.902	1.71			.447	.285			3.665	1.59			-1.701	-.542
MANAGER			5.289	1.98**			3.066	1.447			-1.236	-.49			5.726	1.70
CONSTANT	46.197	23.24*	43.508	8.37*	26.586	6.70*	25.170	5.04*	28.661	4.24*	19.047	2.36**	37.339	4.36*	36.766	3.16**
R^2	.19		.37		.18		.25		.23		.35		.22		.25	

*Significant at $<.01$ **Significant at $<.05$

look at unemployment rates for period 1979-81

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