

ASSESSING DOCTORAL STUDENT EXPERIENCE:
GENDER AND DEPARTMENTAL CULTURE

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Abstract

This study investigated gender differences in the experience of graduate school, using a measure of departmental culture. The survey included 807 men and 334 women who filed their doctoral dissertations at a major research university during 1987-88. In addition, in-depth interviews were conducted with 15 men and 19 women doctoral students. Clear differences between men and women emerged in several major fields of study, with women reporting more dissatisfaction than men in their assessment of the fairness of departmental distribution of resources, the relationships with their doctoral advisors and faculty help with employment. Additionally, hierarchical multiple regression analyses showed a relationship between positive departmental culture and shorter time-to-degree for men and women in some fields. Finally, qualitative analysis of interviews with 34 advanced graduate students revealed a striking pattern of alienation and isolation among the women graduate students. If institutions want to reduce attrition and improve time to doctoral degree, they must improve the culture at the departmental level.

ASSESSING DOCTORAL STUDENT EXPERIENCE: GENDER AND DEPARTMENTAL CULTURE

Introduction

The increasing demand for doctorates to supply American universities and colleges with sufficient numbers of professors has led to a re-examination of graduate education in recent years (Girves and Wemmerus, 1988; Bowen and Sosa, 1989; AAU, 1990; Ziolkowski, 1990). Time-to-degree has become a major focus in several of these studies (Tuckman, Coyle and Bae, 1990; Bowen, Lord, and Sosa, 1991; Nerad and Cerny, 1991). Only a few studies went beyond analyzing statistical data based on demographic student information and examined reasons for long time to degree (Benkin 1984, Tuckman 1990, Nerad 1990). This study continues past research efforts at UC Berkeley and focuses on gender differences in the experience of graduate school and examines whether departmental culture has an influence on time-to-degree.

Gender differences related to satisfaction with graduate school have been observed by Adler (1976) and Clark (1990). These studies reported that graduate women are less satisfied with graduate school than graduate men. Adler points out that the experience of graduate school is indeed different for men and women. She explained that this difference was mainly due to the structure of knowledge acquisition, which tends to be competitive and isolating, and thus many women found it very alienating. Additionally, the conflict between work and family led them to experience graduate

school in a different light than men.

Our focus on departmental culture or climate--the literature often uses these terms interchangeably (Denison, 1990)--emerged from a series of interviews with graduate students from various disciplines. In these interviews, advising and the process of socialization into the profession emerged as key problem areas. Advising comprises guidance both at the departmental level and at the individual level with the dissertation advisor. Professional socialization encompasses encouragement and financial support by the department to present research and publish it, and faculty assistance in the search for employment. All of these issues contribute to departmental culture. Certainly the institution itself, in this case, the University of California at Berkeley, has a culture of its own. There are also subcultures, the major disciplines and departments within those disciplines, which envelop the student and shape a student's graduate career (Becher 1984, Clark 1970).

Organizational theory defines culture as shared assumptions and traditional modes of thinking and behaving. Culture is transmitted to members of the organization through the process of socialization (Louis, 1980; Sathe, 1983; Schein, 1985). It is curious that departmental culture has been rarely studied, because studies of organizational climate and culture have consistently found climate variables to be associated with job satisfaction (Friedlander and Margulies, 1969; Pritchard and Karasick, 1973) and productivity (Hall and Lawler, 1969). According to Denison (1990), a key factor in

organizational culture is the participation of its members in the organization. In our case, that means doctoral students are treated as junior colleagues and integrated into the life of the department, including professional and social activities. Women and minorities are often "outsiders" within the culture of the organization (Kanter, 1977; Forisha and Goldman, 1981). They are isolated and alienated in their position as "outsiders on the inside." Are graduate women as well-integrated into the culture of their departments as graduate men? We examined men's and women's experience of departmental culture to answer this question.

We defined departmental culture as consisting of a set of eight variables: (1) professional relationship with the dissertation advisor; (2) encouragement to publish; (3) faculty assistance with the job search; (4) departmental advising and guidance; (5) fairness of the distribution of financial support within the department; (6) quality of teaching in the department; (7) assessment of the qualifying exam; and (8) faculty/department support to participate and present at local and national conferences.

Faculty are the socializing agents of the scholarly professions. Girves and Wemmerus (1988:168) have stated, "the degree to which faculty impart the feeling of acceptance, support and encouragement will influence the student's feeling of belonging, which could influence retention." Faculty assistance with the job search completes the circle of graduate student experience within the department. A good dissertation advisor should provide guidance on how to obtain professional employment.

Advising on the departmental level should keep students informed of pertinent deadlines, such as fellowships and filing deadlines¹, as well as providing consistent feedback on a student's progress. In this sense, the flow of information should be open and participation of students should be welcome. For example, if information is clearly disseminated in the department, students should know the means of selection for student appointments, and be able to assess the distribution of financial support. Ideally, financial support should be distributed fairly, based on both merit and need.

Students' assessment of a major "rite of passage", the qualifying examination, provided another measure of departmental culture. At best, the qualifying exam should measure a student's mastery of the field, and should provide feedback from the qualifying committee. At worst, a qualifying exam can be a pro forma meeting that has little relationship to progress toward the degree.

The department's provision and support for their students to attend and present their research at local or national conferences, as well as encouragement to publish, shows a concern for students. Whether students are treated as "professionals in the making" or as inferiors affects the culture of the department.

¹ This is mostly performed by the graduate assistant or graduate secretary.

Method

This study has three parts. In the first part, the UC Berkeley Doctoral Exit Questionnaire was examined to determine whether there are differences between women and men in their experience of departmental culture. The second part examined whether a "positive" experience with departmental culture is associated with shorter time-to-degree, or whether dissatisfaction would correlate with longer time-to-degree. The third part consisted of 34 in-depth interviews conducted with advanced doctoral students. All these students had nearly completed their dissertation or had just filed their thesis.

For the first part we analyzed the UC Berkeley Doctoral Exit Questionnaires regarding students' experiences with their departmental culture. This questionnaire was distributed to students at the time they obtained the title page for their dissertations and was collected when they filed their dissertations with the Graduate Division. Students were guaranteed anonymity in this survey. The questionnaire was designed to measure students' graduate experience at UC Berkeley and consisted of 24 questions divided into four parts: (a) demographic information; (b) departmental experience such as financial support, teaching quality, experience with orals, advising and guidance, relationship with major adviser and professional development support; (c) general university experience and; (d) questions concerning future employment.

For our purpose we selected those questions that related to the students' experiences with the departmental culture and asked them to rate their satisfaction on a

three-point scale from very satisfied to dissatisfied.² The following ten questions were chosen to examine gender differences: (1) "Was your departmental graduate student support distributed fairly?" (Students could answer with yes, no, or don't know, and were asked to give further comments.) (2) "As you look back over your doctoral studies at UCB how satisfied have you been with departmental advising and guidance?" (3) "With the overall quality of teaching?" (4) "With the professional relationship with your doctoral supervisor?" (5) "With faculty efforts in assisting you to find professional employment?" (6) "Was your Ph.D candidacy exam and preparation a beneficial educational experience?" (Students could answer yes or no and give open-ended comments.) (7) "Did you attend any national scholarly meetings?" (8) "Did you deliver a paper(s) at any national scholarly meetings?" (9) "Where you encouraged by faculty in your department to publish?" In addition students were asked: (10) "Do you have any other comments concerning your department; e.g., quality of administrative staff, participation in departmental governance, affirmative action efforts, adequacy of space, and information flow?"

We analyzed the data for students from the 98 doctoral programs at UC Berkeley by aggregating the answers by seven major fields of study (humanities, biological sciences, engineering, natural resources, physical sciences, professional schools, and social sciences) and by cross-tabulations, using chi-square analysis. To analyze the three open-ended

²A three-point scale was used to force students to make a definite decision. We realize that a five or seven-point scale would allow finer discrimination of the level of satisfaction.

questions, a stratified random sample of 240 questionnaires, weighted by the n in each discipline, was drawn from the total sample of questionnaires in which students chose to answer these questions (not all students chose to answer). These written responses were used to illustrate the findings.

The thirty-four in-depth interviews (fifteen men and nineteen women) were conducted during the academic year 1987-1988. These advanced doctoral students represented selected departments including the humanities, social sciences, biological sciences, mathematics, and the professional schools. Each interview took approximately one to two hours, and focused upon the student's experience in the department. These interviews served the purpose of placing the responses of the survey within a meaningful context. The in-depth interviews were subjected to qualitative analysis.

Respondents

Respondents for this study were 1,141 graduate students who filed their doctoral dissertations during the academic year 1987-88, and Fall 1988. The high response rate (95%) is due to the fact that students are required to complete the survey questionnaire when they file their dissertations with the Graduate Division.³ Two-thirds (71% or 807) of all students who completed the questionnaire were men and one third (29% or 334) were women. Of these 1,141 students, 62% (711) were Caucasian, 10% (119) were

³ At this point in time, students respond very honestly because they feel fairly secure with their degree in hand.

ethnic minorities, and 24% (272) were international students. Within the ethnic groups, 6% (65) were Asian American, 2% (28) were African-American, another 2% (20) were Hispanics, and 0.4% (4) students were Native American. Half of all foreign students came from five countries; Korea, Taiwan, India, China, and Canada.

Half of all students received a doctorate in engineering (24%) and physical sciences (25%). Another third received their degree in social sciences (17%), biological sciences (10%), and professional schools (10%). The remaining 14% studied humanities (8%) and natural resources (6%).

It is important to understand that women and men are concentrated in different fields of study. In this survey of the 1987-88 doctorates, men as a group were concentrated mainly in three major fields: engineering (31%), physical sciences (28%), and social sciences (15%). Women studied under a wider range of fields: 23% were in the social sciences, 19% were in the professional schools, 16% were in the physical sciences and humanities, and 13% were in biological sciences. Although there were twice as many men as there were women in the surveyed group, women were the majority in the humanities (58%) and the professional schools (55%). The smallest proportion of women were in engineering (9%), with 26 women versus 250 men (Chart 1).

The clustering of men and women in certain departments of the 1987-88 doctorates represents a general trend at UC Berkeley and elsewhere (Nerad 1990).

Taking a larger pool of students -- all those who received doctorates at UC Berkeley between 1980-1987 -- we find a similar picture: women earned their degrees mainly in the social sciences, professional schools, biological sciences, and humanities; men earned their degrees in engineering, physical sciences, social sciences, and biological sciences.

The majority (76%) of these students started their programs between 1980 and 1984; 15% started between 1975 and 1979, another 5% between 1984 and 1985, and the remaining students started graduate study before 1974. Consequently, about two-thirds of all graduate students in this survey completed their degrees in 4 (15%), 5 (24%), 6 (17%) or 7 years (13%). Because women were clustered in departments with long time-to-degree, one-third of the women (31%) took 8 to 13 years, compared with only 17% of the men. However, when time-to-degree for women and men was compared within major fields, there was no significant difference between the average time of women and that of men.

Results

Major gender differences regarding student satisfaction with departmental culture were found. In the following we will discuss only those findings where the differences between men and women showed significant results.

Departmental Financial Fairness

Overall, the respondents stated that financial resources in the department were

not distributed equitably. Students in the physical sciences (74%), natural resources (72%), biological sciences (72%), and engineering (60%) tended to assess their departments as fair in distributing financial resources. About half (52%) of students in the social sciences considered the distribution fair. However, less than half (45%) of the students in the humanities, and only 39% of the students in the professional schools, felt that resources were distributed fairly. Fifty-two percent of the students in the professional schools stated that they could not assess the fairness of the financial support distribution (Table 1). This difference by field was to be expected, since students in the physical sciences, biological sciences and engineering tend to be better funded than in the humanities and social sciences. Probably, the students who received a satisfactory level of support tend to evaluate the fairness more favorably. What was unexpected, however, was the differences by men and women in the same field of study.

Fewer women (33%) than men (61%) in the humanities felt that resources were distributed fairly. Further, 45% of the women in the humanities versus 28% of the men felt that the method for distributing resources was a mystery (^{Graph}~~Table~~ 1). Women's comments reflected this assessment: "The criteria for [financial] awards was never made public"; and "The competition for resources is not open -- you have to wait until the first day of the semester to see if you have support"; "There is no clear policy of eligibility for support." Although nearly equal percentages of women (51%) and men (53%) in the social sciences felt that their departments were fair in distributing resources, 20% of the women and only 7% of the men in these departments felt that the distribution was

clearly unfair (^{Graph 2} ~~Table 1~~). Again, women's comments reflected this concern: "Get real! Our department is known for its' nepotism"; "Power and rewards are distributed unfairly"; and "The same students [every year] get a disproportionate share of the funds."

Relationship with Dissertation Advisor

Ninety percent of all students were either very satisfied (60%) or satisfied (30%) with the professional relationship with their major advisers (Table 2). Ten percent reported that they had problems. When women are compared with men, a slightly lower percentage of women reported satisfaction with their advisers (85% of the women versus 92% of the men) and consequently a larger percentage of women (13% women versus 7% men) were dissatisfied.

Women in the biological sciences were significantly more dissatisfied (31%) than men (6%) with the relationship with their major advisers. ^(Graph 3) Again, comments by women reflected this: "I was pressured by [my advisor] to do more lab work and didn't have enough time to prepare for my orals"; "I had a difficult time obtaining thesis advice," and "My advisor has ignored manuscripts (mine and others) to the detriment of our careers." Men in the biological sciences stated: "My relationship with [my advisor] was excellent in every respect;" and "[My advisor] gave me complete freedom in the lab and was quite supportive of me and my research."

These results raise the question: does the presence or absence of women faculty

members affect women's satisfaction with graduate school? Presently at Berkeley in the biological sciences 16% of the faculty are women (14% are full professors), but 45% of the graduate students are women. In fact, men in the biological sciences who were interviewed stated "There is only one woman in our department who is a faculty member, and she was an adjunct professor for many years before she got her faculty assignment," and "There are many women graduate students in the department, but few women faculty."

Faculty Help with the Job Search

Nearly half of the students were satisfied and another one-third were very satisfied with the help they received from faculty in obtaining professional employment. However, one-quarter of the women across major fields were dissatisfied with faculty help they received in obtaining a job as compared to 17% of men (Table 3).

There were gender differences regarding the satisfaction with faculty help with employment in the physical sciences and the professional schools. Significantly more women (22%) than men (11%) in the physical sciences were dissatisfied with the assistance they received from faculty with the job search. In the professional schools to an even greater degree, more women (38%) than men (16%) were dissatisfied with the assistance they received from faculty (Table 3). Women in the physical sciences stated: "I have some very strong feelings about the guidance I received from several of my distinguished colleagues. When I spoke with several faculty members about my desire to

work at a smaller college with an active research program, I was simply told, 'You'll have to hire someone to help around the house' and I was asked, 'How serious is this relationship you're in?'" Men in the physical sciences stated: "The faculty are all well-connected and recommended me highly [for jobs];" and "My advisor was instrumental in finding me a job."

Does the high satisfaction of men with faculty assistance with the job search in the physical sciences and the low satisfaction of women with faculty assistance with the job search still point to the old prejudice against women in science professions? These findings also might reflect the wide system of "student stars" and "faculty pets" --most often male students--which seem prevalent in the physical science departments. In the interviews both men and women in the physical science department spoke about the star system.

Departmental Culture and Time-to-Degree

The survey results revealed significant differences between women and men in how they experienced departmental culture. Even though we found no significant differences between women and men in average time-to-degree within the major fields (Table 4), the fact that women had more negative experiences than men led us to examine the contribution of departmental culture to time-to-degree. Two problems became evident in examining the relationship between departmental culture and time-to-degree. First, we needed to divide our population into the seven major fields and further

divide these by men and women in order to examine time-to-degree. This resulted in a small n in some cases (for example, in the natural resources, there were only 18 women) which precluded the use of stepwise regression analysis (Wilkinson, 1979). Second our departmental culture variables were somewhat intercorrelated ($r = .13$ to $.45$), so multicollinearity was also a problem. We decided to follow Cohen and Cohen's (1975) suggestion to construct a model of our variables and enter them one-by-one into a hierarchy regression equation by entering the variables we considered most relevant first, and so on. We knew that financial support is a key factor in time-to-degree for graduate students (Benkin, 1984; Nerad, 1990), so we entered students' perception of the fairness of financial distribution first. We then determined the order of entry of the other variables (departmental advising, relationship with the dissertation advisor, teaching quality, faculty help with employment, and a block variable including attending conferences and encouragement to publish) by examining issues raised by the thirty-four students interviewed. We performed multiple regression analyses separately for men and women by major fields.

Several significant contributions associated with the departmental culture variables and the time-to-degree were found. Students' perceptions of the fairness of financial support were related to time-to-degree for men in the physical sciences, and for women in the biological sciences and engineering. Students who perceived that their departments were fair in distributing financial resources took less time to complete their degrees. Probably these students received sufficient financial support.

Men in the biological sciences who were satisfied with the advising they received in their departments took less time to complete their degrees, and men in engineering who were satisfied with the relationship with their doctoral advisor also took less time to complete their degrees. For women in the social sciences, the relationship with the doctoral advisor was related to time-to-degree. Women who were satisfied got through faster. Also for these women, the satisfaction with the quality of teaching in the department made a unique contribution to time-to-degree. Women who were satisfied with the quality of teaching finished sooner. Table 5 summarizes the results of these regression analyses. Charts 2 and 3 also illustrate the relationship between departmental culture and time-to-degree. These results show that departmental culture can indeed have an impact on time-to-degree.

Departmental Culture: Women as "Outsiders"

The interviews in our third part of this study revealed, for women, a striking pattern of alienation. Women were outsiders within their own departments. Thirteen of the nineteen women stated that they felt alienated and isolated in their departments. They did not know the informal rules and conventions of the dominant culture in their department. They interpreted their negative departmental experiences as personal failures, not as a reflection of a "cool" departmental climate. They attributed any success to luck, rather than to personal competencies. They found solace only in the graduate student peer culture. In contrast, men described the factors contributing to their progress in terms of well planned strategies and personal achievements. They explained

their negative experiences in terms of insufficient guidance, faculty aloofness and departmental factions. In addition those men who felt alienated and who saw themselves as peripheral to the department--four out of fifteen--, attributed this to their family conditions or their minority status. They were divorced and had to take care of a child, or married with children, or they were minority students.

Typically, women in the social sciences explained their situation as follows: "I was admitted without a really good idea of what I wanted to do. Things got nebulous after I finished coursework requirements. I spent time floundering and feeling insecure." Or, "I did not know how the system worked. I got the cold shoulder from instructors. There was an assumption that everybody knew certain facts. I seemed to be outside of this." "I did not know what to expect. I felt intimidated by my department." In contrast, men in the social sciences expressed their experiences in the following terms: "When I came, I had focus on what I wanted to do. I chose my dissertation topic in my second year, and did my prospectus in four days." "I learned by myself. I read, I find the stuff I need [to make it in the program]. I knew the department was doing something to minorities, but you just have to be careful. I started steering toward the Institute. The Institute has meant support."

Machung (1989), in a study of Berkeley undergraduates, found that women had no clear knowledge of how graduate school worked and what they wanted to study if they intended to go on. Men, however, knew precisely what their emphases in graduate

school would be and could name concrete steps by which they hoped to succeed. These differences in experiences and interpretation of experiences for men and women graduate students can be traced back to the undergraduate years, and probably even to the high school years.

Another difference between the interviewed men and women doctoral students was in the area of financial support. Five women reported working full-time, either in secretarial positions, as teachers, or in odd jobs while they completed their dissertations. None of the men worked outside the university. In fact most (74%) men held positions related to their professional goals, such as research assistant and teaching assistant. One man stated: "If I were out doing crap jobs just to get the money so I could do my research I might be resentful [of the department]."

Conclusions

These gender differences expressed and the degree of satisfaction associated with departmental culture present the results from one university only and may differ at other institutions. However, these results show that departmental culture must be considered when assessing reasons for attrition and long time-to-degree. Success in graduate school often depends upon the integration into the intellectual community of the student's discipline, and these data demonstrate that women still are not well-integrated into their departmental communities. The students in this sample are the successes of their departments: they filed their degrees. For every five women who completed this survey,

school. Women are outsiders in their fields, often not privy to the benefits available to insiders. We suggest the following avenues for improving departmental culture.

First, departments should develop clear and fair policy on how financial support (teaching and research assistantships, fellowships and traineeships) are distributed, and they should make these policies available to their graduate students. This would certainly improve student morale. Second, explicit expectations about faculty advising should be developed, including a mechanism for enforcing a satisfactory level of departmental and faculty advising. Graduate Divisions should develop a handbook for dissertation advisers and assist faculty to acquire advising skills. Academic senate review committees should broaden the academic program review criteria to include departmental advising and faculty mentoring. Third, guidelines for faculty and departments concerning the provision of assistance with the job search could improve both student morale and the students' chances of successfully securing employment. And fourth, Graduate Divisions should systematically analyze students experiences and report their findings back to the departments. A letter or a visit by the Graduate Dean to a department with a "cool" climate can help change the situation. If such changes are implemented, all students will benefit, women and students of color in particular. Thus the institution may avoid wasting both financial resources and human talents. Improving the situation of women in graduate school would benefit both the institutions and our society.

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DEPARTMENTAL CULTURE QUESTIONS

1. Was your departmental graduate student support distributed fairly?
(Students could answer with yes, no, or don't know, and were asked to give further comments.)
2. As you look back over your doctoral studies at UCB how satisfied have you been with departmental advising and guidance?
3. With the overall quality of teaching?
4. With the professional relationship with your doctoral supervisor?
5. With faculty efforts in assisting you to find professional employment?
6. Was your Ph.D candidacy exam and preparation a beneficial educational experience?
(Students could answer yes or no and give open-ended comments.)
7. Did you attend any national scholarly meetings?
8. Did you deliver a paper(s) at any national scholarly meetings?
9. Where you encouraged by faculty in your department to publish?
10. Do you have any other comments concerning your department, e.g. quality of administrative staff, participation in departmental governance, affirmative action efforts, adequacy of space, and information flow?

Distribution of Doctoral Students by 8 Major Fields of Study for Degrees awarded Fall 1987-Fall 1988

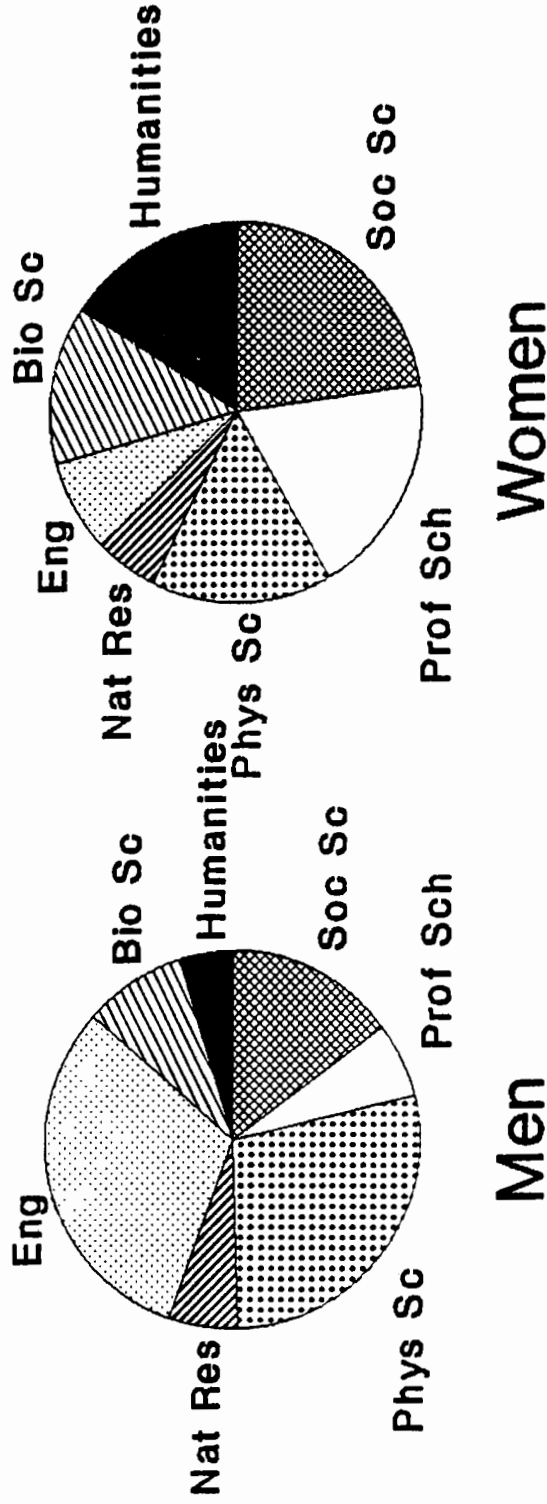


TABLE 1

University of California at Berkeley
 Doctoral Exit Questionnaire
 Doctoral Recipients Fall 1987 - Fall 1988 by Major Fields of Study

Question: **Was your departmental graduate student financial support distributed fairly?**

Major Field	MEN			WOMEN			TOTAL		
	yes	no	don't know	yes	no	don't know	yes	no	don't know
	N	N	N	N	N	N	N	N	N
Biological Sciences	72%	5%	23%	71%	15%	15%	72%	9%	20%
Engineering	61%	9%	30%	48%	20%	32%	60%	10%	30%
Humanities*	61%	11%	28%	33%	22%	45%	45%	17%	38%
Natural Resources	71%	11%	19%	78%	6%	17%	72%	9%	19%
Physical Sciences	74%	5%	21%	77%	8%	15%	75%	5%	20%
Professional School	46%	8%	46%	34%	9%	58%	39%	8%	52%
Social Sciences**	53%	7%	40%	51%	20%	29%	52%	12%	36%
Total Campus	64%	7%	29%	53%	15%	32%	61%	9%	30%

* $\chi^2(2, N=87) = 6.6, p < .05$

** $\chi^2(2, N=193) = 8.2; p < .05$

Note: 4% or 44 students did not answer this question.

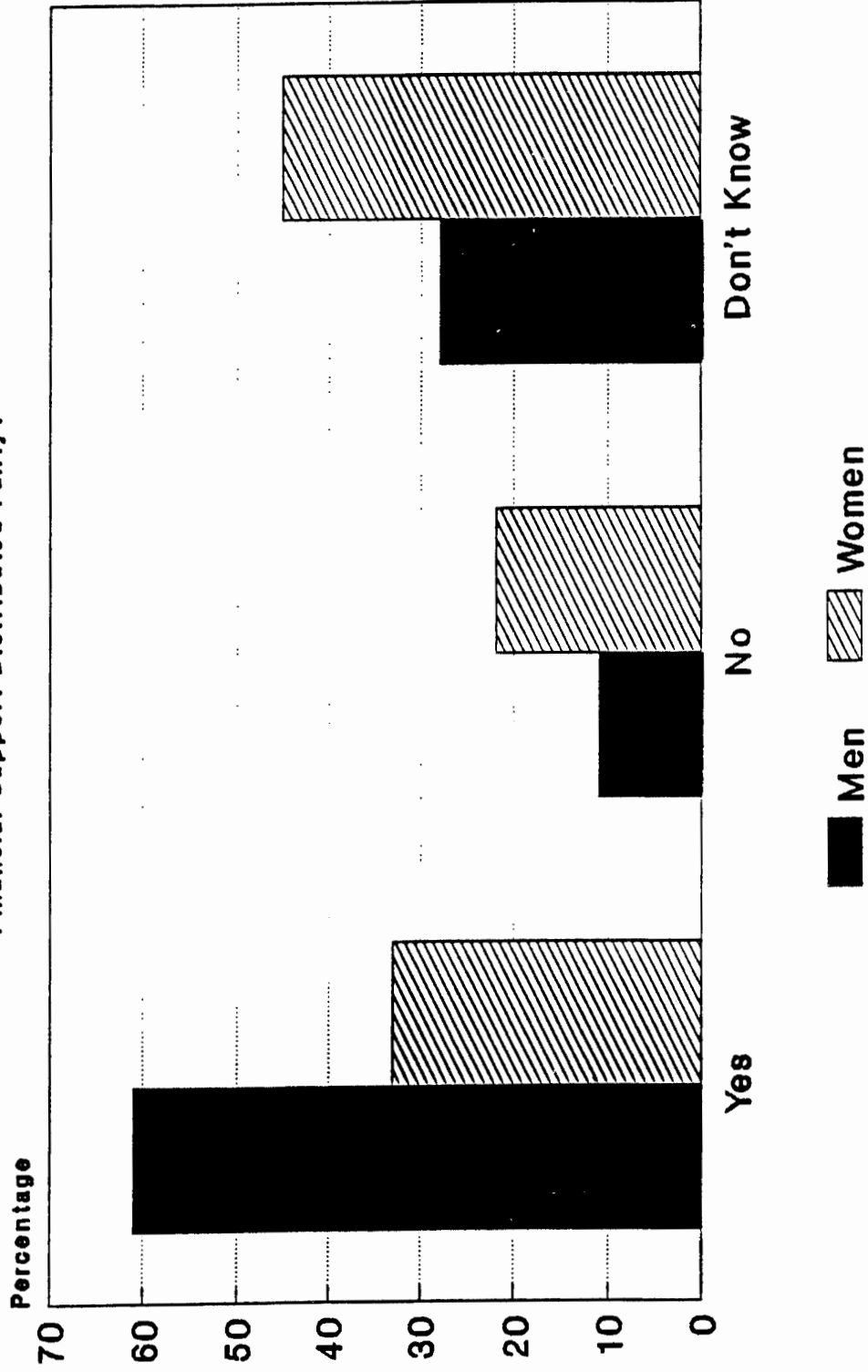
Source: Graduate Division, UC Berkeley, Exit Questionnaire, "1-advisor", 4/26/91, mn

HUMANITIES DEPARTMENTS

UCB Doctoral Exit Questionnaire

Doctorate Recipients 1987-1988

Question 8: Was Your Departmental Graduate Student Financial Support Distributed Fairly?



Source: UCB Graduate Division, 1990.

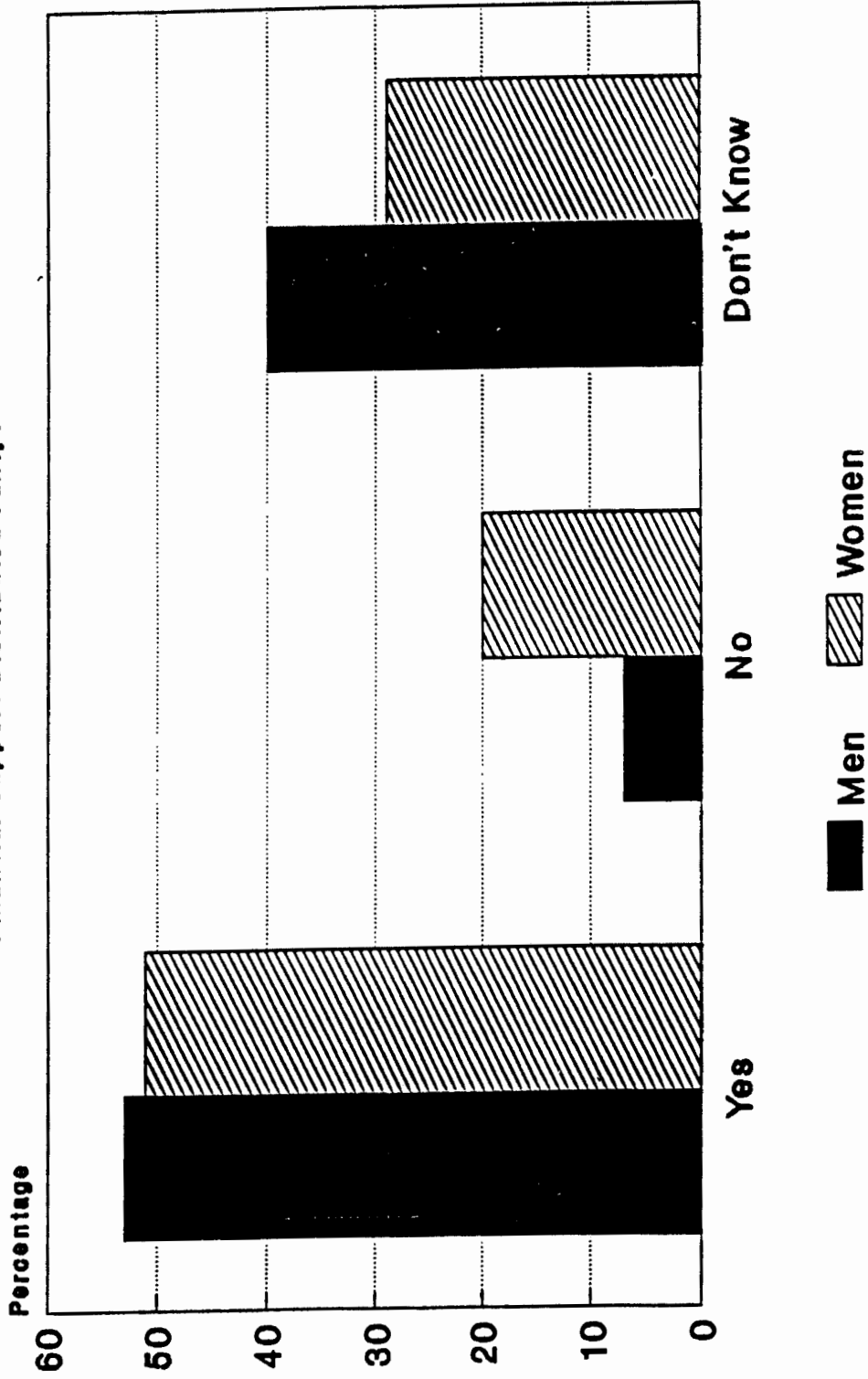
SOCIAL SCIENCE DEPARTMENTS

UCB Doctoral Exit Questionnaire

Doctorate Recipients 1987-1988

Question 8: Was Your Departmental Graduate Student

Financial Support Distributed Fairly?



Source: UCB Graduate Division, 1990.

TABLE 2

University of California at Berkeley
 Doctoral Exit Questionnaire
 Doctoral Recipients Fall 1987 - Fall 1988 by Major Fields of Study

Question: **As you look back over your doctoral studies at UC Berkeley, how satisfied have you been with the professional relationship with your dissertation supervisor?**

Major Field	MEN			WOMEN			TOTAL								
	very satis- fied	satis- fied	dis- satis- fied	very satis- fied	satis- fied	dis- satis- fied	very satis- fied	satis- fied	dis- satis- fied						
Biological Sciences*	59%	(42)	35%	(25)	6%	(4)	38%	(17)	29%	(13)	31%	(14)	51%	33%	15%
Engineering	56%	(141)	36%	(89)	8%	(19)	46%	(12)	38%	(10)	15%	(4)	55%	36%	8%
Humanities	64%	(25)	31%	(11)	6%	(2)	78%	(41)	18%	(9)	4%	(2)	73%	23%	4%
Natural Resources	59%	(29)	33%	(16)	6%	(3)	67%	(12)	17%	(3)	17%	(3)	61%	28%	9%
Physical Sciences	62%	(141)	29%	(67)	7%	(17)	49%	(26)	34%	(18)	11%	(6)	59%	30%	8%
Professional School	64%	(33)	33%	(17)	4%	(2)	56%	(35)	32%	(20)	11%	(7)	59%	32%	8%
Social Sciences	65%	(77)	27%	(32)	7%	(8)	67%	(51)	21%	(16)	12%	(9)	66%	25%	9%
Total Campus	60%	(488)	32%	(257)	7%	(55)	58%	(194)	27%	(89)	13%	(45)	60%	30%	9%

* $\chi^2 = (2, N=102) = 14.26, p < .001$

1.1% or 13 students did not answer this question.

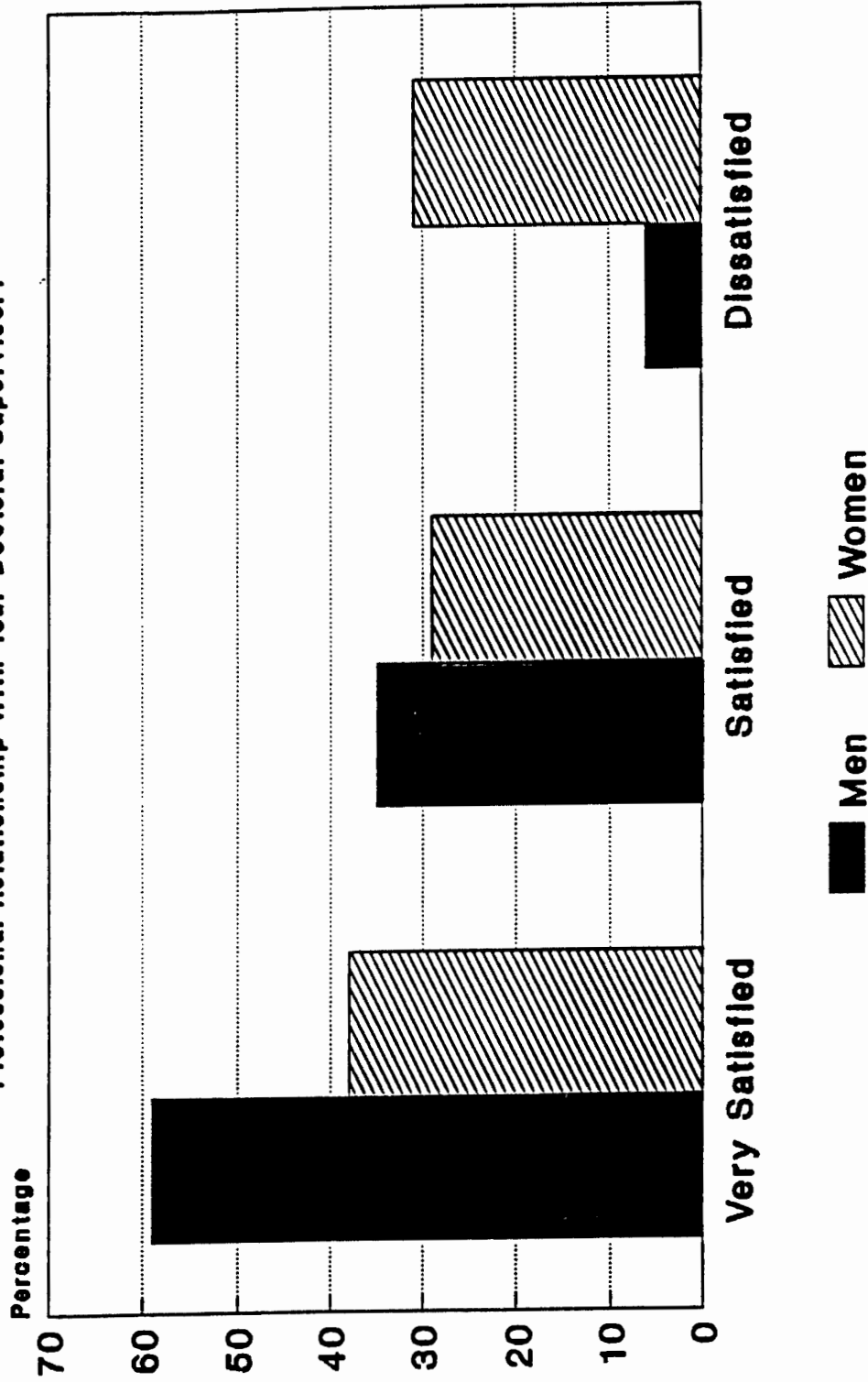
Source: Graduate Division, UC Berkeley, Exit Questionnaire, "1-advisor", 4/26/91, mn

BIOLOGICAL SCIENCES DEPARTMENTS

UCB Doctoral Exit Questionnaire

Doctorate Recipients 1987-1988

Question 11C: How Satisfied Have You Been With the Professional Relationship With Your Doctoral Supervisor?



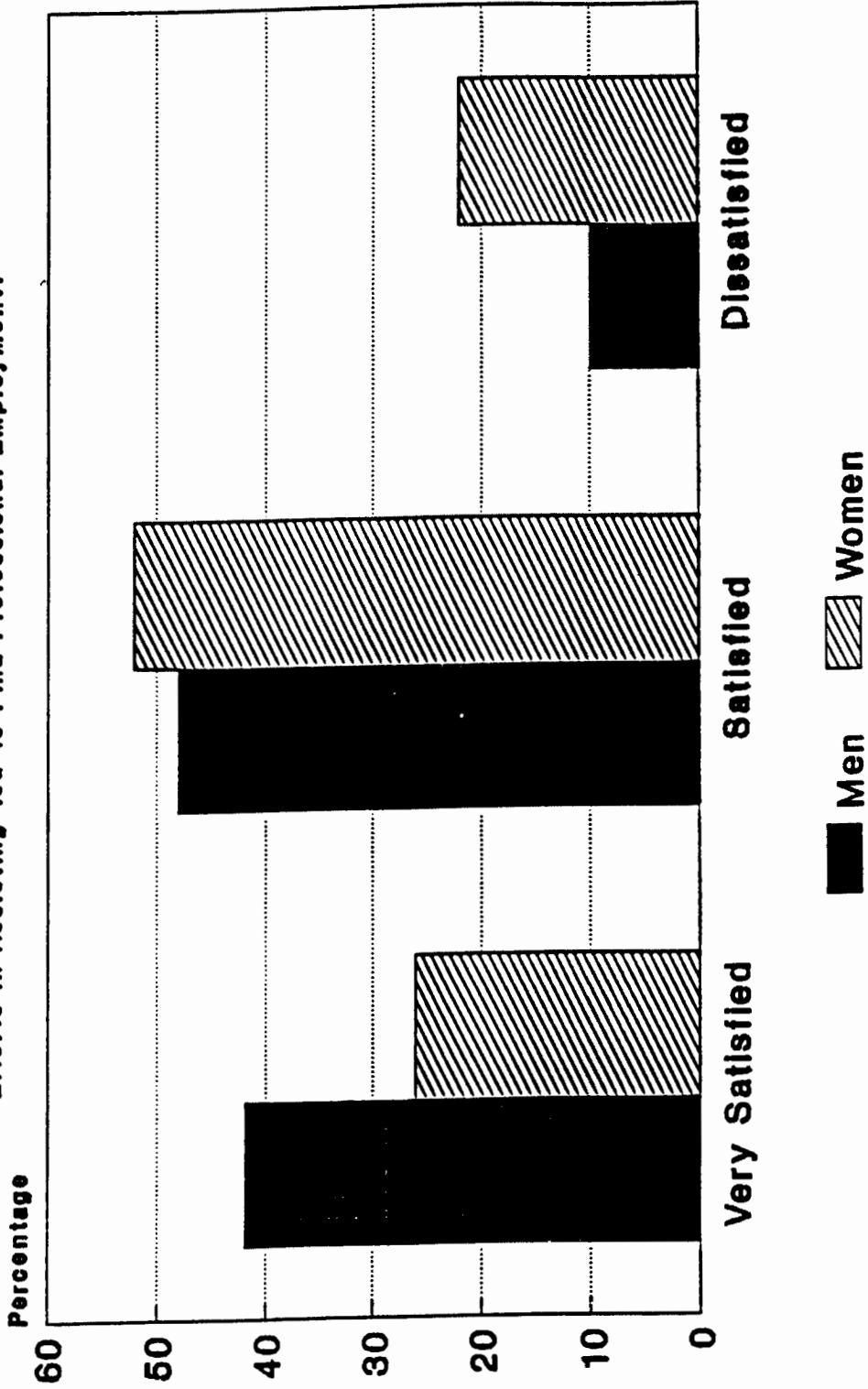
Source: UCB Graduate Division, 1990.

PHYSICAL SCIENCES DEPARTMENTS

UCB Doctoral Exit Questionnaire

Doctorate Recipients 1987-1988

Question 11D: How Satisfied Have You Been With Faculty Efforts In Assisting You To Find Professional Employment?



Source: UCB Graduate Division, 1990.

TABLE 3

University of California at Berkeley
 Doctoral Exit Questionnaire
 Doctoral Recipients Fall 1987 – Fall 1988 by Major Fields of Study

Question: **As you look back over your doctoral studies at UC Berkeley, how satisfied have you been with the faculty efforts in assisting you to find professional employment?**

Major Field	MEN			WOMEN			TOTAL						
	very satis- fied	satis- fied	N	dis- satis- fied	satis- fied	N	dis- satis- fied	satis- fied	N				
Biological Sciences	25%	54%	(30)	21%	21%	(12)	26%	33%	(13)	41%	25%	45%	30%
Engineering	34%	47%	(108)	19%	19%	(43)	25%	42%	(10)	33%	34%	47%	20%
Humanities	27%	52%	(9)	21%	21%	(7)	32%	46%	(20)	23%	30%	48%	22%
Natural Resources	38%	43%	(18)	19%	19%	(8)	24%	65%	(11)	12%	34%	49%	17%
Physical Sciences	42%	48%	(99)	10%	10%	(21)	26%	52%	(26)	22%	39%	49%	13%
Professional School	25%	59%	(26)	16%	16%	(7)	27%	36%	(16)	38%	26%	47%	27%
Social Sciences	42%	38%	(43)	20%	20%	(22)	32%	43%	(29)	25%	38%	40%	22%
Total Campus	36%	47%	(341)	17%	17%	(120)	28%	44%	(125)	28%	34%	46%	20%

* $\chi^2 (2, N=257) = 6.7; p < .05$

** $\chi^2 (2, N=89) = 6.6; p < .05$

Note: 1.1% or 13 students did not answer this question.

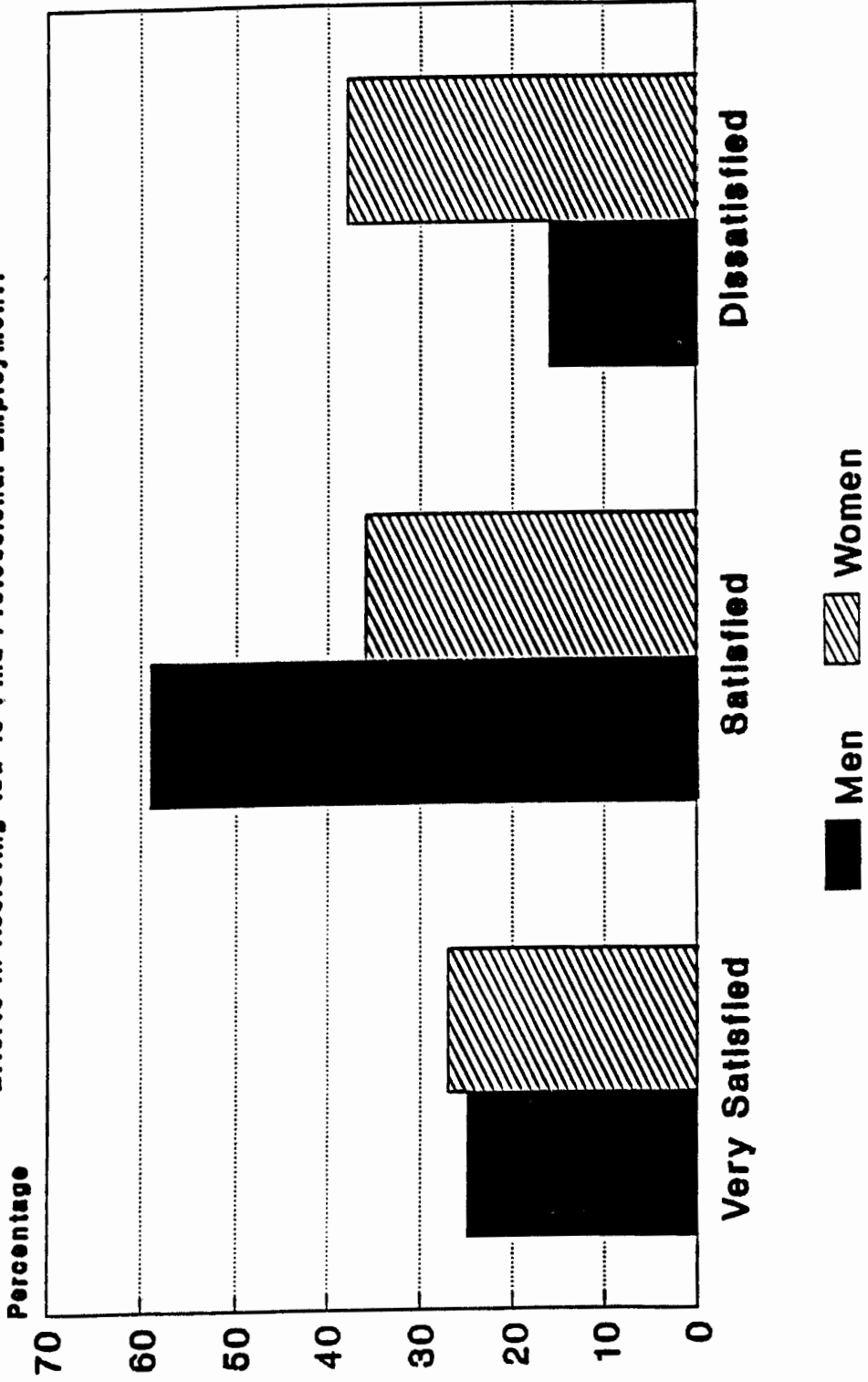
Source: Graduate Division, UC Berkeley, Exit Questionnaire, "1-facempr", 4/29/91, mn

PROFESSIONAL SCHOOLS DEPARTMENTS

UCB Doctoral Exit Questionnaire

Doctorate Recipients 1987-1988

Question 11D: How Satisfied Have You Been With Faculty Efforts In Assisting You To Find Professional Employment?



Source: UCB Graduate Division, 1990.

TABLE 4
 University of California at Berkeley
 Doctoral Exit Questionnaire
 Doctoral Recipients Fall 1987 - Fall 1988 by 7 Major Fields of Study

T-TEST OF GENDER DIFFERENCES IN TIME-TO-DOCTORAL-DEGREE

Major Fields	MEN			WOMEN			t
	Mean Yr	N	SD	Mean Yr	N	SD	
Biological Sciences	5.7	62	2.0	6.0	41	1.4	0.76
Engineering	5.1	248	1.7	5.3	26	1.4	0.61
Humanities	8.6	36	4.0	9.8	52	3.8	1.43
Natural Resources	6.8	48	3.1	6.1	18	2.3	-0.96
Physical Sciences	6.0	223	5.7	5.4	52	1.4	-1.24
Professional Schools	6.2	49	2.7	6.8	60	2.7	1.24
Social Sciences	7.9	118	3.1	8.1	75	2.5	0.54

Source: Graduate Division, UCB, Exit Questionnaire, "t-test," 4/29/91

Table 5

Hierarchical Multiple Regression Analyses of Departmental Culture and Time-to-Degree

Men						
Major Field	Variables	Multiple R	R ²	R ² Change	F Change	
Biological Sciences	Departmental Advising	.35	.12	.10	6.67**	
Engineering	Doctoral Advisor	.17	.03	.02	4.59*	
Physical Sciences	Financial Fairness	.16	.03	.03	5.59*	
Women						
Major Field	Variables	Multiple R	R ²	R ² Change	F Change	
Biological Sciences	Financial Fairness	.35	.12	.12	5.44*	
Engineering	Financial Fairness	.44	.19	.19	5.65*	
Social Sciences	Doctoral Advisor	.30	.09	.06	4.83*	
	Quality of Teaching	.38	.14	.06	4.58*	

* $p \leq .05$ ** $p \leq .01$

DEPARTMENTAL FINANCIAL FAIRNESS

Women's Comments (Biological Sciences) Average time to degree = 6 years.

"I believe students should be guaranteed support. I had to get an outside job to support myself." (7 years to degree.)

"Financial support was arbitrary, occasionally based on discrimination or bias against a particular student's professor." (7 years to degree.)

Women's Comments (Engineering) Average time to degree = 5.3 years.

"Every semester I never found out if I would get support until a week before the semester started. Support should be shared among the faculty instead of depending on your advisor, who might forget to apply for a grant on time." (6 years to degree.)

"I just couldn't tell how financial resources were distributed." (8 years to degree.)

"Financial support was unfair." (7 years to degree.)

"Some are supported and some are not!" (6 years to degree.)

Men's Comments (Physical Sciences) Average time to degree = 6 years

"Why do fellowship holders get even more support?" (7 years to degree.)

"The stated policy was four years of support. In my fifth year, after only three semesters of support, I was cut off." (7 years to degree.)

"I felt support was somewhat random." (7 years to degree.)

"I had to teach and research at other universities to support myself." (7 years to degree.)

ADVISING

Doctoral Advisor

Women's Comments (Social Sciences)

Average time-to-degree = 8.1 years

"Advisor's roles should be improved. Advisors don't know about their own students' progress. Everyone thinks that someone else is taking care of it." (9 years to degree.)

"How I wish I had been advised, instead of blindly guessing along the way!" (9 years to degree.)

"There is a need to establish a real mentoring relationship." (11 years to degree.)

"I wouldn't change a thing! [My relationship with my advisor] was the best experience I ever had!" (5 years to degree.)

Men's Comments (Engineering)

Average time-to-degree = 5.1 years

"I had the best research advisor, as a person, a source of guidance and inspiration." (3 years to degree.)

"My experience at Berkeley would have been much better if I had received more guidance and feedback from my advisor." (9 years to degree.)

"The University should set up a committee to supervise doctoral advisors." (8 years to degree.)

"I'd fire my advisor for general incompetence, laziness and unfair manipulation!" (7 years to degree.)

Departmental Advising

Men's Comments (Biological Sciences)

Average time to degree = 5.7 years

"The information flow [in the department] is poor. Advising is neither explicit nor helpful." (7 years to degree.)

"The department was too disjointed. It was often difficult to get to know faculty - a sense of snobbery [got in the way]." (6 years to degree.)

"Communication in the department was poor." (7 years to degree.)