

Fieldwork for the GSBAS

Ronald S. Burt, September 1998

This note is a description of the fieldwork for the 1998 Graduate School of Business Alumnae Survey (GSBAS). For simplicity, I'll refer to the University of Chicago's Graduate School of Business as the GSB, and the GSBAS as the Survey. The sections in this note are as follows: survey rationale, study population, survey questions, wave one, wave two, and final results.

SURVEY RATIONALE

The Survey served the interests of multiple constituencies. I would feel uncomfortable describing their interests, which would be better described by each individually. It is sufficient for the purposes here (a) to reproduce the cover letter that explained the purpose of the Survey in a way reviewed by the Survey's constituencies (page 6), and (b) to say that the central motivation for the survey was a desire on the part of all constituencies to better understand life after the GSB. Practical benefits of the Survey included the possibility of discovering ways to improve the GSB for future alumnae, adding summary characteristics of alumnae careers to the evolving array of GSB management courses, getting back in touch with the alumnae, and contributing to the community of alumnae by improving their knowledge and awareness of one another. Research questions for the Survey concerned the timing and consequences of events and social networks in the careers of professional women. The Survey was an opportunity to bring GSB management research expertise to bear on an issue of practical and personal importance to the GSB.

Several people, upon hearing about the survey, asked "Why women?" Three reasons. The first and primary reason was academic: For the faculty conducting the Survey, there is more to learn from studying the careers of professional women because their careers involve a more, relative to men, varied set of barriers to success and a more complex mix of work and family obligations. There was also a practical reason: The alumnae are a smaller, and so more manageable, study population. The Survey was conducted on a shoestring budget. Random chance was also a factor: A window of opportunity opened with the inquiry I received from Dubravka Deppen and Mary Lynn Faunda, representing the Women's Business Group (an alumnae club of some 400 members), to see if there was faculty interest in a survey of the GSB alumnae.

STUDY POPULATION

The initial study population for the Survey was all women with a M.B.A. from the GSB. Three groups of alumnae were excluded from the Survey. The first was a dozen women with a GSB M.B.A. who were currently affiliated with the school as faculty, graduate students, or staff. These women were excluded to ensure that no faculty studying the data would accidentally see personal data on a colleague.

Second, several hundred women with a GSB M.B.A. were excluded who were scattered across the globe outside the United States. The logistics of getting questionnaires to and from these alumnae was a consideration, but more important, faculty were of the opinion that we would not receive sufficient questionnaires back to hold constant the many differences between international careers.

Third, the study population did not include GSB alumnae with other than an M.B.A. degree. This included about a hundred women with college degrees from the school (98% of whom graduated before the end of World War II), and another hundred with doctoral degrees from the school. The college and the doctoral alumnae were deemed sufficiently different from the M.B.A. population to require separate study as their own populations.

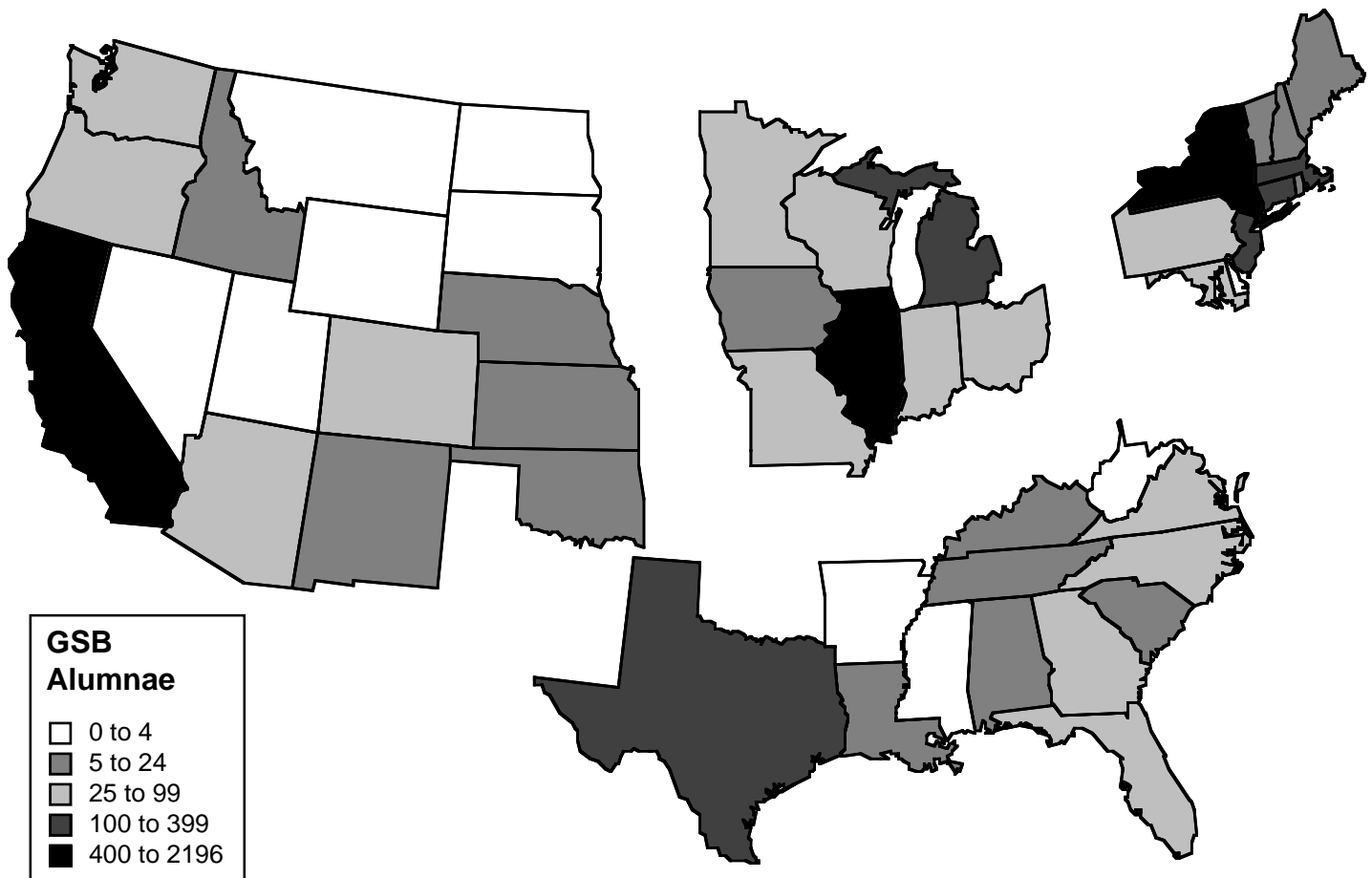
The alumnae are scattered across the country, as illustrated in the map below. There are concentrations in New York, Illinois (primarily Chicago), and California. In nine states, there are no alumnae at all. One could imagine a story about active business centers in the three states combined with a location effect augmenting the Illinois numbers. In fact, and indicating the national market for GSB alumnae, the distribution of alumnae reflects the distribution of income and working women in the country. The number of alumnae in a state is almost perfectly predicted by the number of women in the state labor force, per capita income in the state, and an adjustment for the higher number of alumnae in Illinois.*

SURVEY QUESTIONS

The Survey questionnaire was adapted from an instrument developed at the University of Chicago to measure the social capital of manager contact networks. The text of the questionnaire is available in a separate file on the webpage (GSBAS1). Here I highlight issues to take into account when analyzing the data or planning similar research in future. These are my subjective impressions from looking over the questionnaires.

*Here is the regression equation predicting number of alumnae in a state from (L) thousands of women in the 1980 state labor force, (D) 1980 per capita income in the state, and (IL) a dummy variable equal to 1 for Illinois (estimation is across all 51 states, R² equals .99, and routine t-tests are in parentheses):

$$\text{Number of Alumnae} = -114.26 + .09 L + .01 D + 2,087.20 IL.$$
(14.4) (2.1) (51.3)



General Background (questionnaire pages 2 - 3)

Pages 2-3 of the questionnaire contained general background questions about the respondent's age, time at the GSB, college, opinions of her GSB experience, and opinions about barriers to women in business. The questions worked well in the sense that they provided detail information on respondent views, and no respondents had questions about them (by email, phone, or marginal notes on the questionnaire).

Family Life (questionnaire pages 4 - 7)

Pages 4-7 contained questions on important life events associated with careers. The family questions seem to work well, with two exceptions.

The income question (Q. 12, p. 5) was confusing for some respondents. Almost all respondents completed the question, but some reported family income as their own then left the husband's contribution blank. I only know this because several respondents wrote a note explaining what they had done. A better design would have been to ask for total family income, then ask for the wife's personal income, using the difference to measure husband's contribution. The implication for the GSBAS data is that personal income is suspect for the women living with a spouse who don't report a husband's income. Husband's income is listed as missing for these respondents.

The family life events question (Q. 13, pp. 6-7) was interpreted too literally by some respondents. The question asked when "significant family events" had happened since college graduation. Significant events were to include marriages, births, divorces, and deaths in the immediate family. Most respondents went on to include other significant family events such as infertility treatments, caring for ill relatives, rehabilitation for substance abuse, and so on. On the other hand, two alumnae complained to me that events important to them were not covered by the question because the question only asked about marriages, births, divorces, and deaths. I don't know how many respondents shared this literal interpretation of the question, but it is clear from the responses that many respondents either (a) limited themselves to marriages, births, divorces, and deaths, or (b) had experienced no other significant family events. The implication for the GSBAS data is that the event data on marriages, births, divorces, and deaths are reliable, but data on other kinds of family life events are an incomplete count by some unknown amount.

Professional Life (questionnaire pages 8 - 13)

These questions worked well, with some exceptions. In particular, the career events question (Q18, pp. 12-13) — which is the same format as the family life events question (Q13) except that specific events are requested — worked well in eliciting richly detailed data and no questions or complaints.

There were problems with the questions about the respondent's current, or most recent, full-time job (Q14, pp. 8-9). First, respondents were much more likely to give the number of employees than total sales in describing the company size (Q14C). Getting the name of the company name (Q14A) was important so that size could be obtained for respondents who didn't know how many employees worked for the company. Second, describing the industry in which their company operated (Q14E), several respondents used the vernacular popular in their firm. Several employees in the banking industry wrote "investment banking" as an other industry. Several respondents working in the food industry wrote "consumer goods" as an other industry. This isn't a questionnaire problem so much as a coding problem (having the company name was a great help). Third, the job-rank distinction between individual contributors and managers is less meaningful than the other distinctions because many of the respondents have a secretary, or a portion of a secretary, but some reported themselves as managers because they managed a secretary while others ignored it as staff support. Fourth, the budget question (Q14I) didn't work. Some respondents interpreted the question to mean signature authority, others listed the gross income of the company or their division. Responses to this question aren't comparable across questionnaires. Fifth, the supervision question didn't

work (Q14J) in that some respondents treated everyone under them in the organization as a direct report. Responses to this question should be reduced to binary, supervise people or not, as a check on job rank.

There were also problems with the question on self-employment (Q17, p. 11). First, the question about income should have been explicit about gross income; some respondents answered with gross and others answered with net (which I know only because some answering each way included a note to that effect). Second, five respondents coded themselves as self-employed when they were promoted to partner. Technically this is correct since they became profit-sharing owners, but being promoted to partner in an ongoing firm is different from going out on your own as self-employed. Questions Q16 and Q17 were intended to elicit data about independent business ventures either as an external consultant or as the owner of a start-up business. Most respondents who were partners, and there were many, did not interpret partnership as self-employment. For the few who did, I coded them as answering “no” to Q16 (and gave them a code of 1 on the ERRQ16 variable so they could be separated in analysis).

Contact Network (questionnaire pages 14 - 27)

With the exception of the question about having close friends who also graduated from the GSB (Q21, p. 14), which is a generic sociometric question, these questions came from repeated surveys of managers and presented no problems here.

Values (questionnaire pages 28 - 31)

With the exception of the ten items for the entrepreneurial personality index (Q37, p. 29),* the questions on these pages were untested in empirical research. The questions were selected from pages of intuitions, suggested by one or more constituencies interested in the Survey, about how alumnae values might change with age.**

This is a cross-sectional survey, so the data it provides cannot be used to separate what alumnae believe due to maturity (age effects) from what they believe as a result of conditions when they grew up (cohort effects). An opinion difference between a 50-year old and a 30-year old could be due to the maturity of the older woman (age effect), or could be due to the fact that the older woman matured in the late 1960s and early 1970s, a time when Americans as a society held beliefs different from the beliefs popular when the younger woman matured in the late 1980s and early 1990s (cohort effect).

Nevertheless, value differences between age groups can be a step toward studying value change, and the value items on the Survey are a reasonable beginning. The questions worked well with the exception that I received complaints about the section taking too long because so many items could be interpreted in different ways (a generic problem with value items, but Q39G on “being authentic” was the item most often mentioned by the alumnae).

WAVE ONE

Following the initial contact from the Women’s Business Group on April 9th, and a quick check with the Dean’s office about funds for printing and postage, a draft questionnaire was circulating for comments by April 16th. A final questionnaire went to the printer on June 4th, and after a few iterations through printing problems, questionnaires and cover letters went to the mail service on July 17th for distribution to alumnae. The text of the cover letter is given on page 6. It describes the purpose of the Survey, reasons to participate,

*These items were taken from a widely-used manager personality inventory. Analysis distinguishing the ten items is given in a 1998 article in the journal *Social Networks* (“Personality correlates of structural holes”).

**Discussions of combining redundant items and selecting final items were made less difficult with the help of Delbert Miller’s *Handbook of Research Design and Social Measurement* (1991, fifth edition), and the 1995 report of the Federal Glass Ceiling Commission (“The Environmental Scan,” on the internet; http://www.ilr.cornell.edu/lib/bookshelf/e_archive/GlassCeiling).

Cohort (graduation year)	Returns (by end of August)	Computer Analysis (%)	Summary Report (%)
1990 - 1997	253	77.1	89.3
1980 - 1989	260	60.4	83.1
before 1980	122	50.0	71.3
TOTAL	635	65.0	83.3

and lists people from the GSB staff, Women’s Business Group, and faculty to contact if the respondent has questions. All three contacts received phone calls and email inquiries.

Predicting the Response Rate

Two factors were expected to lower the response rate: This was a mail survey, with a long and complex questionnaire that could take as long as two hours to complete. On the other hand, there were factors expected to increase the response rate: The study population was well above average in intelligence, this was a once-in-a-lifetime survey dedicated to the respondents, and they were promised personal and collective feedback on the survey (see the cover letter).

The situation was complicated further when the mail service neglected to put the requested postage on return envelopes. The service dropped the return-postage charge from our invoice, but the damage was done. The cover letter and questionnaire both stated that the return envelopes were stamped (just “put it in the enclosed stamped and addressed envelope, and drop it in the mail”). I learned of this when I began to receive what would become numerous complaints from alumnae who assumed that they alone had been neglected when they saw no postage on their return envelope. It is impossible to know how much the response rate was affected by (a) respondents feeling that they had been neglected, and (b) the bother of having to go to the post office or the office to return the questionnaire.

Low Response, High Interest, No Bias

The questionnaires began coming in on July 31st, peaked in early August, then slowed to a trickle by the end of August. Returned questionnaires removed 64 alumnae no longer at the address in the GSB database (a modest 1.3%), leaving 4,686 alumnae in the study population. Of these, 635 had returned questionnaires by August 28th (13.6% response rate).

Two characteristics of the sample decreased my initial concern with the low response rate. First, the alumnae returning questionnaires seemed seriously interested in the results of the survey, implying that their responses are high-quality data. Respondents could request a computer analysis of their personal network and a summary report on the Survey (see the cover letter). By August 28th, two out of three had requested the computer analysis (65.0%), and four out of five had requested the summary report (83.3%). Moreover, the respondents requesting either form of feedback came from all income levels, all ages, and all job ranks.* The requests were best predicted by cohort, with alumnae more recently at the school more likely to request the feedback, as illustrated in the above table. Of 253 questionnaires from alumnae who graduated during the 1990s, 77.1% included a request for a computer analysis of their network and 89.3% included a request for the summary report. The percentages drop to 50.0% and 71.3% respectively on

*In a logit equation predicting which respondents requested either form of feedback, feedback is not significantly associated with family income (1.6 t-test), age (-0.9 t-test), or job rank (1.0 t-test), or size of organization (1.7 t-test, though alumnae in organizations with less than 100 employees are less likely to request either form of feedback, -2.2 t-test). The strongest predictor is year of graduation, or cohort, as illustrated by the table in the text (4.8 t-test, for more recent cohorts more likely to request feedback, and the effect occurs with respect to requesting a computer analysis of their network, 5.6 t-test, or a summary report, 4.8 t-test).

First-Wave Cover Letter

July, 1998

Dear GSB Alumna:

As we look to the century ahead and reflect on the past 100 years at the GSB, a question being asked at the GSB is how the alumnae have done professionally and personally. Are they successful and what does that success look like? To understand how GSB women are doing — where they have been, where they are now, and what they need to be successful in the future — several interested parties have collaborated in a project to produce the accompanying survey questionnaire that can provide concrete answers.* I have agreed to be the contact person for a management faculty team that will conduct the research and prepare the final report.

The survey will take some time to complete, so let's be clear about your incentives. First, there is a collective good: The survey will provide needed information for the recruitment of women to the GSB, and data on how to better serve and support GSB women students and graduates.

Second, there is something specific for you: We can offer you a feedback sheet on your personal contact network and how it compares to other alumnae (see the box on the first page of the questionnaire).

Third, there is something to feed your curiosity about others: We will assemble the survey responses to produce a summary report so that you can discover the different directions in which the lives of other alumnae have evolved. There will be one or more events at the Gleacher Center this fall in which the results of the survey are discussed. If you cannot make it to the Gleacher Center, you can still get the summary report (again, see the box on the first page in the questionnaire). Just leave the first page blank if you prefer for us to destroy your questionnaire here in Chicago.

Please help, even if you are not interested in the personal feedback. You will be doing a service to the many alumnae who are curious to know about the lives of other alumnae. Moreover, the exercise can be interesting even in the short-run. People learn a lot about themselves simply by having to think about their history and contact network in response to the questionnaire.

Confidentiality: This is a professional research project with no connection to GSB fund raising. As stated on the first page of the questionnaire, no administrative staff at the GSB or in any alumni organization will see your responses. Nothing you write in the questionnaire will be identified in the final report.

If you have any questions or concerns, feel free to call Danielle Palmer, Director of GSB Alumni Relations (773-702-0520, or danielle.palmer@gsb.uchicago.edu). Also, Dubravka Deppen, President of the Women's Business Group has agreed to respond to questions or concerns (847-729-2903, or dubravka.deppen@mcione.com). You are also welcome to contact me by phone or email at the numbers in the letterhead. I'll get back to you as soon as I can.

Thank you for your help, and I look forward to hearing from you.



P. S. A note on timing — We face a deadline. To have a preliminary report prepared for Gleacher events in November, we have to send whatever questionnaires we have in hand to the data-entry firm next month. Please take some time at your earliest convenience to complete the questionnaire and put it in the mail back to Chicago.

*Initiated by the University of Chicago Women's Business Group, this project quickly found support as an opportunity to bring GSB management research expertise to bear on an issue of practical and personal importance to the GSB. The project moved forward through the collaborative efforts of several groups within the GSB, including the Deans' office, Danielle Palmer in Alumni Relations, Tessa Burton in the Marketing Department, and the faculty who agreed to conduct the research. The project is funded by the GSB and the Chicago Management Council (a non-profit organization established to help Chicago business benefit from GSB management research expertise).

Cohort (graduation year)	Study Population	Returns (by end of August)	Percent
1997	265	44	16.6
1996	237	38	16.0
1995	245	26	10.6
1994	223	32	14.4
1993	189	33	17.5
1992	216	25	11.6
1991	196	27	13.8
1990	218	28	12.8
1989	257	35	13.6
1988	220	31	14.1
1987	213	24	11.3
1986	180	26	14.4
1985	165	20	12.1
1980-84	905	124	13.7
1975-79	625	83	13.2
1970-74	152	23	15.1
before 1970	180	16	8.9
TOTAL	4,686	635	13.6

questionnaires from alumnae who graduated before 1980 (the differences in the table are statistically significant at beyond a .001 level of confidence). This is not a youth effect since there is no association between request and age after cohort is held constant. My interpretation is that the requests for feedback reflect analytical skills. Alumnae more recently at the school, whatever their age, are more familiar with analytical material and so curious to see the Survey results. Whatever their reasons, alumnae interested in feedback I interpret to mean more attention to accurate responses, and so higher quality data.

The second, and more consequential, reason for being unconcerned with the low response rate was the fact that the alumnae returning questionnaires were representative of the study population on three important variables; time, program, and geography. The above table shows how the response rate on August 28th varied across cohorts, from a high of 16.6% among alumnae who graduated in 1997, to a low of 8.9% among alumnae who graduated before 1970. The alumnae in that oldest cohort vary from some who graduated in 1969, back to three who graduated in 1937. The higher level of non-response in the oldest cohort is in part due to more retirements (two wrote back kindly explaining that the questionnaire didn't make sense to complete at this point in their lives). The response rate increases to 15.1% among the alumnae who graduated in the early 1970s. In all, there is no significant tendency for alumnae in any one cohort to respond more or less than alumnae in other cohorts (13.95 chi-square, 16 d.f., $P = .60$).

There are similarly no significant differences by program or geography. Alumnae from the campus programs were no more likely to respond than alumnae from the downtown programs (0.31 chi-square, 1 d.f., $P = .58$). Alumnae from each of the four regions distinguished in the map on page 2 were equally likely to send back a questionnaire (1.20 chi-square, 3 d.f., $P = .75$), and alumnae in Chicago were no more likely to respond than alumnae elsewhere (0.02, 1 d.f., $P = .90$).

Second-Wave Cover Letter

August, 1998

Dear GSB Alumna:

Response to the GSB Alumnae Survey sent out last month has been terrific (despite our mail service neglecting to put the contracted postage on the return envelopes). To refresh your memory, I have enclosed a copy of the initial cover letter explaining the survey.

I regret that we didn't hear from you. If you recently returned the questionnaire, thank you (and please ignore the rest of this letter). If you have not yet returned the questionnaire, we can still include you in the survey if you can get it back to us within a couple weeks. If you no longer have your questionnaire and wish to participate in the survey, you can write "Send new questionnaire" across this letter and return it in the enclosed envelop to receive another copy of the questionnaire.

If you will not be able to return a questionnaire, I write to ask a quick favor. To get full value from the questionnaires that were returned, we need to check for differences between alumnae who responded and those who did not.

Your name is one of a few drawn at random from the alumnae in your cohort who did not respond to the survey. The reverse side of this letter has seven key background questions from the survey. Please take a minute or two to answer the seven questions, and return the completed page in the enclosed envelop. This will be very quick.

And thank you for helping us get maximum value from the time so many alumnae have put into the survey.

Sincerely,



WAVE TWO

Nevertheless, with so many alumnae not responding it seemed wise to make more thorough tests for response bias to make sure that the data in hand represented the silent alumnae. For example, were women who had withdrawn from the labor force embarrassed, and so less likely to respond? Did the probability of response vary with job rank? To answer questions like these, I drew a 20% random sample of alumnae who had not responded by August 28th for a second-wave questionnaire (a total of 811 women). Alumnae were sampled within the 16 cohorts distinguished by row in the table on page 7. For example, 44 of the 265 graduates in 1997 returned a questionnaire, leaving 221 who did not return a questionnaire, of whom 44 (the quota of 20%) were sampled at random for the second wave.

The second wave consisted of the cover letter given above and the one-page questionnaire on page 9. There were seven questions in total, and five only asked the respondent to circle a category. Response categories were defined to represent the distribution of data on hand by August 28th. The questions would provide data to determine whether the Survey respondents differed from non-respondents in age, household composition, family income, labor-force status, organization size, or job rank.

1. When did you graduate from the GSB? (year): _____

2. Date of birth? (year): _____

3. Who currently lives with you? Please circle all that apply.

- | | |
|--------------------|--------------------------------------|
| 1. No one | 5. Friends |
| 2. Spouse/partner | 6. Lodgers |
| 3. Children | 7. Housekeeper, au-pair, nanny, etc. |
| 4. Other relatives | 8. Other |

4. Please circle the category that best describes your family income in 1997. (Family income is your personal W2 income, plus Schedule C self-employment income, plus investment or other income, plus income from a spouse, partner, or ex-spouse.)

- | | | |
|------------------------|--------------------------|--------------------------|
| 1. \$ 0 - \$29,999 | 4. \$100,000 - \$149,999 | 7. \$300,000 - \$499,999 |
| 2. \$30,000 - \$59,999 | 5. \$150,000 - \$199,999 | 8. \$500,000 - \$999,999 |
| 3. \$60,000 - \$99,999 | 6. \$200,000 - \$299,999 | 9. \$1,000,000 or more |

5. What is your current labor force status? Please circle all that apply.

- | | |
|------------------------------------|---|
| 1. Full-time job outside your home | 4. Homemaker |
| 2. Part-time job outside your home | 5. Unpaid work outside your home (volunteer etc.) |
| 3. Retired | 6. Unemployed, looking for job |

If you hold a part- or full-time job, please fill in the last two items.

6. How many employees work for your company? Please circle one category (best guess).

- | | | |
|--------------|-------------------|----------------------|
| 1. 5 or Less | 4. 501 - 1,500 | 7. 20,001 - 50,000 |
| 2. 6 - 100 | 5. 1,501 - 7,500 | 8. 50,001 - 100,000 |
| 3. 101 - 500 | 6. 7,501 - 20,000 | 9. More than 100,000 |

7. How would you describe your rank in the company? Please circle one category.

1. Individual Contributor — you don't supervise anyone else's work,
2. Manager — you supervise one or more individual contributors,
3. Middle Manager — you supervise one or more managers,
4. Senior Manager — you supervise one or more middle managers,
5. CEO — most senior executive in firm (could be President or other title).

FINAL RESULTS

Questionnaires were sent to data entry on September 30th. Questionnaires were still arriving, but the rate had slowed to one or two every three days or so. Eleven of the second-wave questionnaires were returned because the alumna had moved to an unknown address, leaving a final study population of 4,675 women. The three columns on the next two pages divide the study population into 3,643 “silent” alumnae from whom I heard nothing in the first or the second mailing, 232 “nonresponders” who returned the one-page questionnaire but not the full questionnaire, and 800 “sample alumnae” who returned the full questionnaire (70 of whom were in the second-wave sample but returned their full questionnaire). The survey response rate is 17.1% (800 of 4,675). The response rate for the second-wave is 37.2% (302 of 811).

The first three panels on page 11 show no response bias. The strongest bias is the higher tendency for graduates of the campus program to return questionnaires (57% of nonresponders graduated from campus programs versus 60% of sample alumnae), but the tendency is statistically negligible. I also tested for differences between the “silent” alumnae versus nonresponders, and “silent” versus the sample alumnae. There are no statistically significant differences on the three variables. The sample alumnae are representative of the study population by program (campus versus downtown), cohort, and region.

The second-wave questionnaires reveal additional ways in which the sample alumnae are representative, and one way in which they are not. Results on page 12 show three additional points of representation: household composition, family income, and job rank. Slightly less than half of the alumnae live with a husband and children, a quarter live with their spouse only, and another quarter live alone. Almost half of the alumnae have family incomes between one and two hundred thousand a year, one in five has a family income under one hundred thousand, one in three has a family income between two and five hundred thousand, and three percent enjoy family incomes in excess of a million dollars a year. With respect to job rank, half of the alumnae currently employed are independent contributors or junior managers. One in three is a middle or senior manager. One in ten is the most senior person in their company (CEO, president, etc.).

The one response bias is that alumnae less active in the business world were less likely to return the full questionnaire. This is evident in two ways. First, retirees were less likely to send back the full questionnaire. The panel at the bottom of page 11 shows that 5.2% of the sample alumnae are over 55, versus 10.7% of the nonresponders. This tendency not to receive questionnaires from retired alumnae is consistent with the verbal and written messages to me in which retired alumnae explained that the full questionnaire was not relevant to their current activities or not interesting at their career stage. Take away the alumnae over age 65, however, and the response bias disappears. The statistically significant chi-square on page 11 is insignificant across the age categories up through age 65 (5.67 chi-square, 3 d.f., $P = .13$; and there is no significant difference between the two groups in average age under 65, -1.4 t-test). Second, housewives were less likely to send back a full questionnaire. Toward the bottom of page 12, 11.8% of the 800 sample alumnae were housewives, retired, or unemployed looking for work, versus 27.6% of the 232 nonresponders. If the “other” alumnae are removed from the data, there are no significant differences between the sample alumnae and the nonresponders in the size of the company for which they work (12.02 chi-square, 8 d.f., $P = .15$).

In sum, the sample alumnae are representative of working women in the study population, which in turn, is distributed across the country in proportion to income and working women in the general population. Since housewives and retired alumnae are under-represented in the sample, it makes sense to analyze the 706 working alumnae separate from the 94 other alumnae (housewives, retired, or unemployed looking for work), because the 706 working alumnae can be analyzed as an unweighted sample of working women in the study population.

(columns sum to 100%, allowing for rounding to the nearest decimal)

Comparison Variable	Did Not Respond (N = 3,643)	One-Page Questionnaire (N = 232)	Returned Full Questionnaire (N = 800)
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Program

(3.19 chi-square, 2 d.f., P = .21)

Campus programs	56.5	58.2	59.9
Downtown programs	43.5	41.8	40.1

Cohort (graduation year)

(33.80 chi-square, 32 d.f., P = .38)

1997	5.4	4.3	7.1
1996	4.9	4.3	6.0
1995	5.3	5.2	4.8
1994	4.8	4.3	4.9
1993	3.8	0.9	5.6
1992	4.7	5.2	4.1
1991	4.2	3.9	4.4
1990	4.8	4.3	4.3
1989	5.4	5.6	5.6
1988	4.6	6.0	4.9
1987	4.6	5.2	4.1
1986	3.8	4.7	3.8
1985	3.6	4.3	3.1
1980-84	19.2	20.7	19.5
1975-79	13.7	12.1	12.0
1970-74	3.2	3.0	3.5
before 1970	4.0	6.0	2.4

Region (see map on page 2)

(9.26 chi-square, 8 d.f., P = .32)

East	21.7	18.1	22.1
South	8.7	9.5	10.4
Midwest (except Chicago)	21.6	27.6	21.3
Chicago	33.6	28.9	32.3
West	14.4	15.9	14.0

Age

(20.38 chi-square, 4 d.f., P < .001)

less than 35	...	18.5	26.5
36 - 45	...	50.0	46.0
46 - 55	...	20.7	22.4
56 - 65	...	4.7	3.9
over 65	...	6.0	1.3

(columns sum to 100%, allowing for rounding to the nearest decimal)

Household composition

(3.60 chi-square, 5 d.f., P = .61)

Lives alone	...	24.1	21.3
Children, no spouse	...	5.2	3.3
Spouse only	...	23.3	27.1
Spouse and children	...	41.4	42.1
Spouse, children, and nanny	...	3.9	3.6
Other (e.g., friends, relatives)	...	2.2	2.6

Family income (in thousands)

(4.77 chi-square, 8 d.f., P = .78)

Less than \$30	...	1.9	1.4
\$30 - 59	...	2.8	4.0
\$60 - 99	...	17.1	15.1
\$100 - 149	...	25.0	21.7
\$150 - 199	...	18.1	17.3
\$200 - 299	...	14.4	19.1
\$300 - 499	...	12.0	12.5
\$500 - 999	...	6.0	5.4
Over \$1,000	...	2.8	3.4

Size of Employer (# employees)

(43.15 chi-square, 9 d.f., P < .001)

More than 100,000	...	6.9	5.6
50,001 - 100,000	...	7.8	10.1
20,001 - 50,000	...	6.9	11.5
7,501 - 20,000	...	7.3	14.8
1,501 - 7,500	...	10.8	13.5
501 - 1,500	...	4.7	6.5
101 - 500	...	7.8	8.6
6 to 100	...	9.1	9.6
5 or less	...	10.3	8.0
Other (housewife, retired, unemployed looking for work)	...	27.6	11.8

Job rank (if employed)

(0.73 chi-square, 4 d.f., P = .95)

Independent contributor	...	26.7	28.8
Manager	...	27.3	25.2
Middle manager	...	15.1	15.8
Senior manager	...	21.5	20.2
CEO	...	9.3	10.1