Baccalaureate Education and the Employment Decision: Self-Employment and the Class of 1993

a working paper by

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In the small business research community, we often ask about the decision to become an entrepreneur. Why do certain people become self-employed and others choose to work for someone else?

This paper delves into the relation of collegiate education to the employment decision. We are able to identify specific characteristics of the individuals who are self-employed versus those who opt to work for a for-profit business, a not-for-profit entity, or the government (including the military). Specifically, this research utilizes the U.S. Department of Education's Baccalaureate & Beyond (B&B) data series, which tracks college and university graduates in the class of 1993. This longitudinal survey asks a number of questions to a nationally representative sample of college and university students who were seniors during the 1992-1993 academic year. The same students answer follow-up questions periodically. In the case of the B&B data, there is information from subsequent questionnaires in 1994, 1997, and 2003. Much of the analysis in this paper focuses on employment in 2003, i.e., ten years after graduation.

Overall Findings

This study shows that the self-employed closely resemble the larger population in many ways. Unlike others who pursue wage-and-salary occupations in the not-for-profit or government sectors, students in the class of 1993 who were self-employed in 2003 were less likely to have earned or be currently enrolled in graduate education. Graduates with social science and "other" majors were more likely to be self-employed. In addition, those individuals who chose self-employment had shorter job tenures than others, such as those who now work for government or the military.

Highlights

• One's choice of baccalaureate major is a major determinant of eventual mode of employment. The self-employed, for instance, are less likely to have high concentrations of education, engineering, math, or science majors. Business and management majors are more likely to work for a for-profit business, with social science and "other" majors gravitating toward self-employment.

• The self-employed tend to have slightly lower grade point averages (GPAs) than their wage-and-salary peers. Those with higher GPAs are more likely to pursue an occupation in the not-for-profit or government sectors. These sectors have high concentrations of graduates who now work in the health care and education sectors, both of which require advanced or professional degrees.

• While those with greater household income are more likely to become self-employed, the impact is slight. Every $10,000 in additional income raises the probability of being self-employed by 0.09 percent. In comparison, a $10,000 increase in salary results in a 2.64 percent higher probability of working for a for-profit firm. Workers in the non-profit and government sectors were associated with lower salaries.

• The self-employed, in greater proportions than the population as a whole, either earn less than $20,000 or $100,000 or more. Such a U-shaped distribution suggests the wide variation of career options and financial pay-outs among the self-em-

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ployed; some entrepreneurial occupations pay very little while others pay above average.

• Like their for-profit peers, the self-employed in this sample have not been engaged in their current job for long. They are newly entrepreneurial, at least with their current business.

• Prior self-employment in 1997 did not affect whether a student was self-employed in 2003.

• Traditional measures of academic involvement (such as internships, jobs within one's major, merit scholarships, or academic scholarships) or quality (such as tuition or the Carnegie classification of the college or university) did not affect the decision to become self-employed.

• Race, ethnicity, and gender did not play a significant role in determining who would eventually become self-employed. With that said, men were more likely to work for a for-profit entity, whereas women worked in greater numbers in the non-profit sector.

• Students' motivations as a college student closely resembled their eventual employment outcome. For example, those individuals who became self-employed were more likely to state that owning their own business was important to them, and government workers valued job security.

• While these models have some definite conclusions regarding the impact of academic, demographic, and financial indicators, much of the likelihood of a particular employment decision remains unexplained. There are many other motivations for pursuing self-employment (or other options), which are not accounted for here, and future research in this area should explore this issue in more depth.

• The finding that business and management majors were either less likely or not significantly different than others to pursue self-employment should serve as a greater impetus for academic institutions to recognize that the self-employed stem from a wider variety of majors than is perceived by conventional wisdom. It reinforces the relevance of the current drive toward entrepreneurship-across-the-curriculum initiatives, which are becoming more commonplace.

Note

The author obtained access to this data set, which is restricted in its usage because of privacy concerns, after a memorandum of understanding (MOU) was signed between the U.S. Small Business Administration and the U.S. Department of Education's National Center for Education Statistics. Interested parties can reference MOU control number 0701163, which was signed on January 17, 2007.

Scope and Methodology

The Baccalaureate & Beyond data series is utilized in this analysis. Graduates of the class of 1993 were asked a series of questions during the 1992-1993 academic year and in three subsequent follow-ups. For purposes of this analysis, respondents answered a question in 2003 regarding their current employer. This study observes various differences between four different employment choices—self-employment or working as a wage-and-salary worker in the for-profit, not-for-profit, or the government/military sector. It is a nationally representative sample, and many distinguishing characteristics can be observed by contrasting the four groups. Tables 1 through 7 discuss such differences.

To assist with the analysis, multivariate logit regressions are performed. In each model, the employment outcome (e.g., self-employment, working for a for-profit, etc.) is the independent variable and various dependent variables help to predict whether or not a graduate of the class of 1993 would choose such an outcome. The results of these logit equations appear in Tables 8 to 10.

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BACCALAUREATE EDUCATION AND THE EMPLOYMENT DECISION: SELF-EMPLOYMENT AND THE CLASS OF 1993

A Working Paper by Chad Moutray[1]

Introduction

In the small business research community, we often ask about the decision to become an entrepreneur. Why do certain people become self-employed and others choose to work for someone else? Moreover, what are the characteristics of the typical small business owner? There have been a number of studies that have examined this issue. For instance, Moutray (2007) finds that the self-employed are more likely than wage-and-salary workers to be older, married, white, rural, a military veteran, and a homeowner; moreover, increased educational attainment increases the likelihood of self-employment. Other studies have concluded the same.[2]

This paper delves into the relation of collegiate education to the employment decision. We are able to identify specific characteristics of the individuals who are self-employed versus those who opt to work for a for-profit business, a not-for-profit entity, or the government (including the military). Specifically, this research utilizes the U.S. Department of Education's Baccalaureate & Beyond (B&B) data series, which tracks college and university graduates in the class of 1993.[3] This longitudinal survey asks a number of questions to a nationally representative sample of college and university students who were seniors during the 1992-1993 academic year. The same students answer follow-up questions periodically. In the case of the B&B data, there is information from subsequent questionnaires in 1994, 1997, and 2003. Much of the analysis in this paper focuses on employment in 2003, or ten years after graduation. To the best of my knowledge, the present study is the first to link and analyze educational

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[1] The author, Chad Moutray, is the chief economist and director of research for the Office of Advocacy of the U.S. Small Business Administration (SBA). The opinions expressed in this article are those of the author and do not necessarily reflect the views of the Office of Advocacy, the SBA, or the U.S. government. Thanks to Brian Headd, Joseph Johnson, Jules Lichtenstein, Ying Lowrey, Shawne McGibbon, Radwan Saade, George Solomon, Dillon Taylor, and Mark Weaver for their helpful comments on an earlier draft. Any errors are attributable to the author.

[2] See, for instance, Zissimopolous and Karoly (2007) or Shane (2008), among others.

[3] The author obtained access to this data set, which is restricted in its usage because of privacy concerns, after a memorandum of understanding (MOU) was signed between the U.S. Small Business Administration and the U.S. Department of Education's National Center for Education Statistics. Interested parties can reference MOU control number 0701163, which was signed on January 17, 2007.

experiences at the baccalaureate level with self-employment and other employment decisions using the 2003 B&B data responses.[4]

The rest of this paper is organized as follows. First, literature on occupational decision-making and the importance of human capital variables to one's overall career success will be presented. Second, various tabulations of B&B data will be organized by the 2003 employment decision to gain a better understanding of differing characteristics of each group. For instance, how does one's choice of college major eventually affect the decision to become self-employed instead of pursuing employment elsewhere? How do various demographic factors play into this decision? Furthermore, in what industries do the self-employed or others eventually choose to work, and how do such decisions translate into salary or household income? In addition, are there specific traits that one might look for in college seniors that might foreshadow where an individual will eventually choose to work? Such insights will be important when formulating a series of multivariate logit models for each employment group on the employment decision. Finally, the last section will discuss the findings from the tables and regression models and offer insights on their implications for policy makers and for additional research in this area.

Literature Review

The benefits of increased education and knowledge have been well-documented in the literature, especially since the pioneering research by Schultz (1961), Becker (1975), and Jacobs (1984). Mincer (1974), for instance, found that each additional year of schooling increased earnings by about 10 percent in the United States with some variation over time and across countries. Along those lines, the U.S. Census Bureau reported in 2006 that men who obtained a bachelor's degree or higher earned an average of $87,777 per year, which is more than double the average annual earnings of the typical male with only a high school degree ($40,112). For women, the figures were $55,222 and $28,657, respectively—again, nearly double.[5]

[4] The National Center for Educational Statistics (2002) released a publication titled *Beyond 9 to 5: The Diversity of Employment among 1992-93 College Graduates in 1997* which discussed this cohort in 1997 and graduates who had obtained "alternative employment." These alternative working arrangements included self-employment, part-time employment, and working in multiple jobs. This publication is mostly descriptive in nature; it also looks at the cohort four years after graduation, instead of ten years beyond the bachelor's degree.

[5] For more information, see the *2008 Statistical Abstract of the United States*, published by the U.S. Census Bureau, Table 681.

Human capital researchers have devoted many hours to the issue of whether obtaining a degree increases overall productivity, thereby raising earnings for the individual (or in terms of public policy, for the nation as a whole). In the literature, the gains in income that arise from the receipt of a degree or certification are known as "sheepskin effects," and numerous authors find evidence of significant sheepskin effects resulting from post-secondary education.[6] Ferrer and Riddell (2002) noted that a college diploma or trade certificate increased marginal earnings by 5 percent for men and 3 percent for women. Likewise, a bachelor's degree increased earnings by 21 percent (for men and women), and those with advanced degrees saw even greater rewards. The authors concluded their study by stating that "these results indicate that both years of schooling and credentials are important determinants of earnings" (p. 903), a finding echoed by others, as well.

Obtaining a degree, though, only goes so far. The quality of education is also an important criterion in any job search. Jones and Jackson (1990) observed a positive relationship between a student's grade point average and their future earnings, a finding that was true for both sexes.[7] Grades are often used as a "screen" for large businesses in determining who to hire. Moreover, Bowman and Mehay (2002) found that annual earnings were higher for those students who attended top-tier private academic institutions, confirming conclusions made by Brewer and Ehrenberg (1996) and Brewer et al. (1999). Wise (1975a, b), on the other hand, analyzed that the choice of college major was the primary determinant of salary differentials, with grade point average and college quality variables explaining one's promotion capabilities. An examination by Reed and Miller (1970), for example, found that students who majored in engineering, the physical sciences, and business earned more.

Indeed, the college major does influence the eventual employment choice. Belfield (1999) observed that certain graduates employed in certain professional occupations were more likely to be found in larger firms. For instance, those graduates working in business or manufacturing were employed in a large business, and small firms did not tend to attract graduates in business administration, science, or engineering. The author also noted that the grades of those working in smaller firms tended to be lower on average, and they were less likely

[6] Other studies on "sheepskin effects" and the positive returns to education include Dominitz and Manski (1996), Hilmer (2002), Hungerford and Solon (1987), Jaeger and Page (1996), Kane and Rouse (1995), Katz and Murphy (1992), Murphy and Welch (1992), Park (1999), and Psacharopoulos (1974).
[7] In addition to Jones and Jackson (1990), see also Filer (1981, 1983) and Wise (1975a).

to have earned as many professional qualifications or advanced degrees as their peers who were employed by large businesses. Similar characteristics were found in public sector employees. Lichtenstein (2008) made similar findings, and he also showed that small business employees were less likely to have vocational certification.

While Moutray (2007) found that increased educational attainment corresponded to higher levels of self-employment, research tends to show that "being one's own boss" does not necessarily yield higher earnings. Indeed, many would-be entrepreneurs have high—perhaps unrealistic—expectations regarding their future earnings potential, according to Arabsheibani et al. (2000). A number of authors have observed that the self-employed earn less than their employed counterparts. Hamilton (2000), for example, noted that "the present value to the median entrepreneur of a business lasting 25 years is over 25 percent less than the present value of a paid job during the same duration. Even more striking, median self-employment earnings never overtake the alternative entry wage available on a paid job with zero job tenure" (p. 628). This is a startling finding, and certainly one that might call into question why anyone would want to become self-employed. Yet, other studies have reached similar conclusions, such as Åstebro and Bernhardt (2005), Evans and Leighton (1989), Fairlie (2001), and Heywood and Wei (2004).

Small businesses are also less likely to provide the same level of benefits as their larger counterparts, putting them at a disadvantage when competing for qualified human capital (Joel Popkin and Company 2005). Small firms are not only less likely to provide health insurance, but they provide fewer retirement benefits and less vacation or sick leave. Hope and Mackin (2007) found that smaller businesses experience more employee turnover than large businesses, as the provision of more benefits increases retention.

Aside from salary and benefit considerations, there are non-pecuniary benefits to self-employment that motivate many to become their own boss. Vila and García-Mora (2005) stress that "[entrepreneurship] is generally associated with greater autonomy and self-control over work. Those working for themselves have better chances to use their skills in the design and implementation of their work. They also have the freedom to use independent thought and judgement in doing things, which in turn increases their sense of control over labour process and their outcomes" (p. 415). Moreover, increased autonomy has been shown to increase overall job satisfaction, with entrepreneurs more satisfied than their wage-and-salary peers (Ross and Reskin, 1992; Blanchflower, 2000).

Each of these studies is integral to the development of the model for this paper. Indeed, the central purpose for parsing out differences between the self-employed and wage-and-salary workers is the ability to understand what makes them unique relative to their peers. The analysis that follows, for instance, is able to isolate the academic experiences of the baccalaureate class of 1993 and to see how they translate ten years later in terms of their overall employment. By and large, the results of this paper confirm the findings of previous research, and yet, there are also some surprising conclusions, as well. The next two sections will delve into these observations in greater detail.

Examining the Data

The U.S. Department of Education's Baccalaureate & Beyond longitudinal data series is unique in that it tracks a nationally representative sample of graduating college students over time, allowing researchers to link educational performance with future outcomes.[8] For purposes of this study, participating graduates are asked about their current employer, and this allows us to know if he or she is self-employed or working for someone else. Specific categories of wage-and-salary employment for comparison purposes in this analysis include individuals who work for a for-profit entity, a not-for-profit entity, or the government or military.[9] In addition, the data set provides a rich amount of information at the time of graduation (1993) and at three other points in time after graduation—1994, 1997, and 2003. We will focus on the outcomes in the year 2003, which will allow us to assess the employment decision and other statistics ten years beyond the receipt of a bachelor's degree.

This section will discuss some of the characteristics of the 1993 graduating class. With that knowledge, we hope to disentangle the characteristics of the self-employed, particularly in relation to educational attainment but also relative to other demographic and motivational factors, and relative to other choices of employment as measured by the participant's status in 2003.

[8] For more information on the B&B longitudinal study, see http://nces.ed.gov/surveys/B&B/. Note that the U.S. Department of Education also administers the High School & Beyond longitudinal study, which tracks high school graduates over time. It is much older, with the first cohort examining 1972 high school graduates. See http://nces.ed.gov/surveys/hsb/.

[9] As the question asks about the "current employer," it is assumed that these are their primary occupations.

Table 1 outlines demographic comparisons among the four employment categories. There are 7,050 observations in total, and 690 of these graduates described themselves as self-employed in 2003.[10] This rate of 9.7 percent self-employed is roughly similar to the overall self-employment rate in the economy.[11] The number of self-employed does present some challenges, though, in making conclusions about them. With only 690 observations, there are often not enough degrees of freedom to find statistical differences between the proportions found among the self-employed and the overall population of respondents; nonetheless, we are still able to reach a number of significant insights into this group. Of the remaining graduates, 53.0 percent work for a for-profit firm, 19.4 percent for a not-for-profit, and 17.9 percent for government or the military.

Some interesting observations can be made in looking at the different groups. For instance, there are statistically significant differences in terms of gender. Men were slightly more likely to be either self-employed or to work for a for-profit, whereas a far greater proportion of women were employed in the not-for-profit or government sectors. Most of the participants in the B&B survey were traditional college-age students. (This suggests that they were born in the late 1960s or early 1970s, making them part of "Generation X"). The non-traditional (older) students were more likely to be employed ten years later in either a non-profit or government entity; nearly 9 percent of the students in those two groups were 50 or older in 2003 (although they made up less than 6 percent of the entire group). In addition, a relatively smaller percentage of Blacks and Hispanics were self-employed or worked for a for-profit entity.

Other interesting correlations should be noted. The self-employed were statistically less likely to be separated, divorced, or widowed, and they were more likely to have at least four children. It is hard to tell why this might be the case, especially since it is widely perceived that entrepreneurs might need to work *more* than salaried employees, who often have more regular forty-hour-a-week schedule. In comparison, government or military employees were more likely to be separated, divorced, or widowed. Non-resident aliens were be statistically more likely to

[10] Note that for confidentiality reasons when using B&B data, the number of observations has been rounded to the nearest ten.

[11] In 2003, there were 15.3 million self-employed individuals (including incorporated and unincorporated entities), according to the Current Population Survey (http://www.sba.gov/advo/research/sb_econ2005.pdf, Table A.3). At the same time, the Bureau of Labor Statistics reported that there were 137.7 million civilian employees. This suggests an 11.1 percent self-employment rate for the economy as a whole, which is reasonably similar to the 9.7 percent rate found in the 2003 B&B cohort. We can assume that this self-employment figure would include both incorporated and unincorporated self-employment, as the questionnaire does not distinguish between the two.

be self-employed, and not-for-profits had a slightly higher percentage of employees who are non-citizens.[12] The finding in Moutray (2007), that military veterans were more likely to be self-employed, was not supported in this analysis; however, given the demographics of the class of 1993, this should not be a surprise.[13]

In terms of earnings, the self-employed tended to have higher concentrations at both ends of the income spectrum (Table 2). They were, for instance, statistically more likely to have earnings in 2003 of either less than $20,000 or $100,000 or more. In comparison, those working for a not-for-profit or government saw greater percentages of their workers earning less than $60,000, and for-profit employees were more likely to earn between $60,000 and $99,999.

The monthly rent or mortgage payments of these baccalaureate graduates were likewise clustered at high and low ends of the spectrum. Statistically higher percentages of the self-employed either had no rent or mortgage payment, or they paid $1,500 per month or more (a U-shaped distribution). For-profit and government workers followed a more traditional distribution; although, there were statistically significant differences from the average. Meanwhile, not-for-profit employees had larger proportions paying less than $1,000 for either their rent or mortgage costs. As expected, these observations showed a correlation between salary and housing. Along those lines, the self-employed were less likely to rent their home, and those employed by a non-profit were less likely to own their home.

Most of those gravitating to self-employment did not do so immediately after graduating in 1993 with their bachelor's degree. Only 19 percent of the self-employed in 2003 considered themselves to be self-employed in 1997, which was four years after receiving their degree (Table 3). On the other hand, those individuals employed by someone else in 2003 were significantly less likely to have been self-employed in 1997 (only 4.2 percent).

Similarly, the self-employed were more likely to be relatively new in their current job, with statistically significant differences in the proportion of self-employed being in a job for zero

[12] For trends on self-employment, see Fairlie (2004). He writes that immigrant self-employment rates converged with native-born rates in 2003. As more immigrants have entered the labor force in recent years, they now account for a larger percentage of the total self-employed – 14.7 percent in 2003.

[13] Many of the veteran entrepreneurial class tend to be older, with greater proportions stemming from World War II, the Korean conflict, or the Vietnam War, according to Lichtenstein and Sobota (2007). Most of the students in the current analysis are from "Generation X" and would not have served in the military during wartime. In fact, Table 1 shows that only 3.7 percent of the students sampled were a military veteran in 1993. Moutray (2007) found that military experience strongly correlated with the likelihood of self-employment using a data set that included a larger population sample, including older workers.

to two years versus the overall total. Conversely, relatively fewer of the self-employed had been in their recent job for ten years or more. This was similar to the results for the for-profit sector. Government workers, however, had proportionally longer job tenures, with 55.5 percent of them having worked for the government or military for at least five years.

In examining the industrial breakdowns of the various groups, some definite trends emerge (Table 3). Relative to the total population, the self-employed were more highly concentrated in the following sectors: agriculture, forestry, and fisheries; construction; retail trade; business and personal services; and entertainment and recreation services. The single largest cluster of self-employed 1993 graduates was in the health care field, however the bulk of this sector's personnel are employed in non-profit enterprises (as many hospitals are organized in this fashion). For-profit enterprises tended to be concentrated in the following industries at larger rates than the total: mining, petroleum, and drilling; construction; manufacturing; utilities; wholesale distribution and recycling; retail trade; finance, insurance, and real estate; communications; and transportation. Given the economies of scale required for many of these firms, these findings confirmed conventional wisdom; few would expect the self-employed to be actively engaged in the mining industry, for example. Meanwhile, the top three industries for not-for-profits were health care, education, and professional and related services. For the government, nearly 60 percent said that they worked in either education or public administration and public safety. It is important to note that these data confirm that most educational institutions, from kindergarten to graduate level, are in either the public sector or organized as non-profits.

Of course, one's future industry is affected in many ways by one's choice of college major, and these choices also show some interesting breakdowns. Those students with business and management undergraduate degrees gravitated toward the for-profit sector (Table 4). The proportion of business majors going into self-employment was not statistically different from the total population. Instead, the self-employed were more likely to come from the social science or "other" fields. Social science majors were also prevalent in not-for-profits and the government. Unfortunately, the B&B data does not provide more information on what social science major the student enrolled in; in terms of academic majors, the social science field is very broad and includes such fields as economics, English, history, political science, psychology, sociology, and social work, among others. The other majors provided expected results. Education majors were

most likely found in not-for-profit or government entities (as shown above in the discussion of Table 3). Engineering, math, and science students worked for for-profit businesses in 2003; whereas, health and biological sciences majors were most likely found working for a non-profit.

In terms of school performance, earlier studies found that small business employees tended to have lower academic scores (Belfield 1999) and that entrepreneurs tended to be jacks-of-all-trades in a number of courses without mastering any of them (Lazear 2004, 2005). This appears to be the conclusion with the B&B data, as well. The undergraduate grades of the self-employed were not significantly different than the total population (Table 4), and when examining grade point averages in specific courses (Table 5), the self-employed had slightly lower-than-average GPAs in math, science and engineering, social science, and statistics—all differences which are statistically significant, but only at the 10 percent level of confidence. In contrast, the students with higher average GPAs were more likely to find employment as wage-and-salary workers in the non-profit or government sectors (Table 4). Table 5 shows significantly higher GPAs, for instance, for not-for-profit employees in their foreign language, science and engineering, social science, and statistics coursework. Government employees had above-average grades in social science. For-profit workers mirrored the grades of the total population; if anything, these students tended to earn more Bs and Cs in their coursework (Table 4).

Given these findings, it is perhaps surprising that the self-employed and those working for for-profit firms were more likely to have graduated from a research or doctoral-level university (Table 4). These institutions offer a wide variety of bachelor's degrees, have at least ten doctoral-level programs, and receive at least $15 million in annual federal research support.[14] Greater proportions of the self-employed and for-profit workers had attended Research I or II institutions. Of the for-profit employees, over 80 percent of them graduated from an institution offering master's or doctoral degrees.[15] Meanwhile, over half of the non-profit and government workers received their bachelor's degree from institutions where either a baccalaureate or master's were the highest degree offered.

[14] Research I-level institutions have at least fifty doctoral-level programs and at least $40 million in annual research support from the federal government. Doctoral I & II are similar to Research I & II, except for the federal support for research criteria. Note that the B&B data uses the older Carnegie Classification system that would have been active in 1993. There were revisions in both 1994 and 2000. For more information, see http://www.carnegiefoundation.org/.

[15] This figure includes the 3.1 percent who enrolled in a professional or specialized institution, as these would include colleges and universities that might offer advanced degrees in business, law, or medicine.

None of this analysis suggests, of course, that these students did not enroll in a higher-level program for graduate coursework beyond their undergraduate work. The opposite, in fact, is true. Table 6, for instance, shows that the self-employed and for-profit workers were statistically less likely to pursue graduate education, contradicting the findings of Moutray (2007); whereas, non-profit workers were statistically more likely to have enrolled in graduate education. Likewise, those working for the government or the military had higher proportions of their populations attaining a master's degree or higher; they were also more likely to be currently enrolled in such programs. Again, given the occupational and industrial mix of those working in the not-for-profit or government sectors (which are heavily concentrated in professional fields such as education, health, and law), this is not surprising.

Digging into the psyche of these students, the B&B survey asked questions during the 1992-1993 school year about various motivational factors regarding their future employment (Table 6). These questions delved into the factors that were most important to them after graduation. (Examples include financial security, being a leader, having children, ability to travel, etc.) Table 7 compares the various responses for those students based on their 2003 employment classification. Its results conform to stereotypes. The self-employed, not surprisingly, had the greatest proportion of those students responding that owning their own business was important to them. Likewise, those working for a for-profit entity were statistically more likely to suggest that being well-off financially, having a good start-off income, and job security were important. Non-profit employees stated in greater numbers that they wanted to influence the political structure, live close to their parents or relatives, have intellectually challenging work, and have time for extracurricular activities. Lastly, government employees noted the importance of influencing the political structure, establishing roots, having intellectually challenging work, and having job security. More surprising are the things these individuals found to be less important than the overall average. Relatively lower percentages of self-employed respondents gave priority to being well-off financially, having more leisure time, or finding a job that they found interesting.

Model Results

In the data provided in the previous tables, we have learned a significant amount about the baccalaureate class of 1993. This next section will delve into the predictive determinants of

the 2003 employment decision. In other words, we will create four models using multivariate logit regressions showing how various factors influence the probability of being self-employed or working as a wage-and-salary worker for a for-profit, non-profit, or government/military entity. The results of these logit regressions appear in Tables 8, 9, and 10. Table 8 uses four identical models with the exception of the dependent variable, and the models in Table 9 vary depending on the "best fit." The last table includes some of the motivational factors which might influence the graduates' employment decision.

The model attempts to predict which graduates were self-employed (or one of the other employment choices) in 2003; the independent variable is a "one" for those who were self-employed (or other), or it is coded with a "zero" for those who were not. The literature review and findings from Tables 1 through 7 were helpful in selecting the appropriate independent variables. In many ways, these regressions tend to confirm the earlier findings; although, there are some differences. In general, the following conclusions could be made from Tables 8 through 10:

- ***One's choice of baccalaureate major matters.*** One of the strongest sets of variables in all four models was the undergraduate major. Again, this should not be surprising given the fact that a student's concentration choice most often leads to a career in that chosen field, and those jobs are often located in specific sectors. For example, education majors are more likely to work in the not-for-profit and government sectors. The marginal effects value after the logit suggests that education majors are 10.20 percent more likely to work for a non-profit and 11.50 percent more likely to work for government (using the numbers from Table 9). This finding is a reflection of how educational institutions are often organized.

  Along those lines, business and management majors are 12.23 percent more likely to work for a for-profit business. Engineering, math, and science graduates tend to gravitate as well toward for-profits, but those undergraduates enrolling in health or biology more often worked for a not-for-profit ten years later. Unlike the earlier findings, there was not

a significant relationship between social science majors and self-employment.[16] Instead, the regressions tend to show a positive relationship between majoring in social science and working in a not-for-profit or government entity.

- ***Undergraduate grades tend to be slightly lower for the self-employed.*** Similar to the findings from Tables 4 and 5, students who suggested that their overall grades were "mostly A's" were about 2 percent less likely to be self-employed. This should not be overanalyzed, however, as it is probably a reflection of the fact that such students tend to gravitate towards other careers. These self-employed are not necessarily poor students either.[17] As for other models, undergraduate grades were not a determining factor for other employment options.

- ***Graduate education reduces the probability of self-employment or working for a for-profit entity.*** Moutray (2007) showed that additional educational attainment increased the probability of being self-employed; whereas, Weaver, Dickson, and Solomon (2006) in reviewing the literature found that "education beyond a baccalaureate degree has generally not been found to be positively linked to entrepreneurship." This analysis supports the latter finding. Those with a master's degree are 2.06 percent less likely to be self-employed, and those with a doctorate are 3.91 percent less likely. In the for-profit sector, the differences are much starker. Those with a doctorate degree are 27.73 percent less likely to work for a for-profit business. Individuals who pursued graduate education are more likely to find a job in the non-profit sector or in government.

- ***Those with greater financial assets tended to be either self-employed or in a for-profit business.*** Moutray (2007) also found that wealth, as defined by owning a home or the value of one's house, helped to determine whether or not someone was self-employed. This analysis finds financial assets to be less conclusive and less important. Those with

[16] Note that the category of "other majors" was omitted as the regression model could not include all possible options. The previous tables had suggested that the self-employed were more likely to be either social science or other majors.

[17] Table 5, for instance, shows that the GPAs of the self-employed were statistically lower than the overall average in mathematics, science and engineering, social science, and statistics classes. However, these differences are relatively minor in comparison to the overall average GPAs.

greater household income are more likely to be self-employed, although the impact is quite small. Every $10,000 in additional household income raises the probability of being self-employed by 0.09 percent. In comparison, a $10,000 increase in salary results in a 2.64 percent higher probability of working for a for-profit firm. Not surprisingly, greater salaries are associated with a reduced likelihood of being in the not-for-profit or government sectors.

- ***The self-employed tend to work in either the goods or "soft" service sectors.*** If an individual is employed in a goods sector job, they are 10.76 percent more likely to be self-employed.[18] This reflects the strong influence of self-employed agriculture and construction workers in the sample. Other industries in the goods-producing sector (e.g., manufacturing and mining) tend to have heavier concentrations of large for-profit businesses.

  Since the results suggest a positive relationship between the goods-producing sectors and self-employment, the opposite is also true—those employed in service sector jobs are less associated with self-employment. However, the service sector encompasses a wide variety of industries, making it hard to ascertain such results. Clearly, there are individuals who are self-employed in the service sector. To account for this, the models in Tables 8 and 9 include a variable for those who are employed in a "soft" service sector job, consistent with Moutray (2007). So-called "soft" services are those which tend to be more white collar in nature; as such, they also tend to require greater educational attainment in general.[19] Indeed, those individuals who are employed in a "soft" service industry are nearly 5 percent more likely to be self-employed. This reflects such industries as professional and business services, which have a significant small business presence.

[18] Goods-producing industries include agriculture, forestry, and fisheries; mining, petroleum, and drilling; construction; and manufacturing.

[19] Nongovernmental "soft" service sector industries used in this analysis of B&B data include the following industries: retail trade – sales and rental; finance, insurance, and real estate; business services; personal services; entertainment and recreation services; professional and related services; health care; communications; hospitality; and education.

- ***Self-employed and for-profit employees have shorter durations at their current job.*** The longer they have worked in their current job, the less likely they are to be either self-employed or to work for a for-profit entity. Longer tenure, however, is associated with government service.

- ***Demographic variables have little impact in determining who will become self-employed; they are more important in predicting other employment choices, however.*** Those individuals who are single are 1.64 percent less likely to be self-employed. This is consistent with other studies which suggest that self-employed individuals are more likely to be married. Age, sex, ethnicity or race, and the number of children do not significantly affect one's decision to become self-employed, however.[20] This is a surprising result given that previous research has shown that such individuals are more likely to be white and older, for instance.[21]

  Demographic variables did make a difference in the other employment models for wage-and-salary workers. Older workers in the 1993 graduation cohort (those born before 1967) are more likely to work in the not-for-profit or government sectors; whereas, traditional students (those born in 1967 or after) have a greater probability of being at a for-profit. Men are 3.13 percent more likely to work for a for-profit and 2.51 percent less likely to work in a non-profit. In addition, government workers are more likely to be single, divorced, or widowed and to have fewer children.

- ***Prior self-employment in 1997 does not affect whether a student was self-employed in 2003.*** Moreover, it is not a significant variable in the other models either.

- ***Traditional measures of academic involvement or quality do not have an impact on the decision to become self-employed.*** Conventional wisdom holds that internships, jobs within one's major, merit scholarships, or academic scholarships should increase one's

[20] Note that the specification of children is different in the regressions than in Table 1, which had the self-employed significantly more likely to have at least four children. The models regressed the actual number of children and not a specific range of children.
[21] See Moutray (2007) and footnote 2.

prospects beyond college. None of these are significant determinants of whether a student eventually becomes self-employed or worked for a for-profit, not-for-profit, or government. Likewise, the quality of the academic institution—as measured by whether or not it was a Research I & II or Doctoral I & II Carnegie classification—does not affect the student's final destination. Tuition does not matter either.

- ***Some key motivational factors can be distinguishing clues into one's eventual employment.*** In Table 10, we add the various questionnaire responses during the 1992-1993 academic year regarding students' values in their future careers and lives. Most of these motivators are not found to be statistically significant and add nothing to the overall logit model, but certain key ones are both statistically significant and illuminating. The self-employed, for instance, are less likely to say that prestige and status are important to them, and those working for a for-profit firm are less likely to want to be an authority in their field. Government workers, as we have observed elsewhere, desire more job security, and non-profit employees stated a desire to engage in more intellectually challenging work. Surprisingly, many of the observations made earlier from Table 6 are not significant. For example, whereas the self-employed are more likely than the rest of the population to state a desire to own a business in Table 6, that variable is not significant in the logit model. Similar observations could be made regarding the other groups, such as the lack of statistically significant findings between a desire for more financial income for for-profit workers and the desire to influence the political structure for not-for-profit workers.

Overall, the logit equations confirmed conventional wisdom and the analysis of the previous tables. Note that the pseudo R^2s are roughly 2 percent for the models predicting self-employment (due in large part to the lower number of observations) and 9 to 11 percent for the other models. This suggests that, while these models have some definite conclusions regarding the impact of academic, demographic, and financial indicators, much of the likelihood of a particular employment decision remains unexplained. There are many other motivations for

pursuing self-employment (or other options), for instance, which are not accounted for here, and future research in this area should explore this issue in more depth.[22]

Conclusion and Discussion

Moutray (2007) found a strong linkage between educational attainment and the choice to become self-employed. As this paper examines only baccalaureate graduates, its purpose was to explore specific attributes about the educational experience and link them with the employment decision ten years beyond graduation. Unlike the earlier work, those bachelor's degree students from the class of 1993 who later pursued graduate education were less likely to pursue self-employment. This finding mirrors other researchers' work, but more importantly, it is the result of the make-up of the self-employed in this sample, which are heavily engaged in the goods-producing sectors of agriculture and construction (as well as professionally-oriented "soft" services).

In addition, this paper supports the notion that the well-educated are afforded a wide variety of opportunities beyond self-employment.[23] It finds that students with higher grade point averages gravitated toward careers in the not-for-profit and government sectors. These sectors have high concentrations of graduates who now work in the health care and education sectors, both of which require advanced or professional degrees.

In many ways, the self-employed in this sample closely resemble the population as a whole. There are often few statistically significant distinguishing characteristics of the self-employed. Part of this, we can assume, is the lower number of observations for the self-employed versus the other groups, but it might also go beyond that. Those individuals who end up working for themselves are the typical average student.[24] This study tends to support that notion; although, further examination would be needed to make a stronger argument of this point.

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[22] Some people pursue self-employment out of necessity, for instance. Block and Wagner (2006) find that education is more important for entrepreneurs exploiting an opportunity than for those who choose self-employment based on necessity. Other motivations, which are not explored here in this analysis but have been discussed elsewhere in the literature, are the role that family experiences, technology, and geography play in the entrepreneurship decision.

[23] For example, Rissman (2003) found that greater educational attainment tended to reduce one's willingness to choose self-employment as other options were often more lucrative.

[24] Lazear (2004, 2005) found that entrepreneurs were jacks-of-all-trades who were decent in a number of subjects but excelled at none of them; such skills provided a stronger background for being able to run a number of aspects of their businesses (e.g., accounting, human resources, management, marketing, etc.).

The previous section discusses some of the other broader conclusions from the various logit regression models. Adding to those bullets would be some of the findings from the earlier tables that delved into some of the underlying trends in the data. Many of these trends provide some further insight into the overall results. For example, it is interesting to know that the self-employed are more likely than the population as a whole to earn less than $20,000 or $100,000 or more. Such a U-shaped distribution suggests a wide span of different career options and financial payouts among the self-employed; some entrepreneurial occupations pay very little while others pay above average. Another insight is the fact that the self-employed in this sample have not been engaged in their current job for long; they are newly entrepreneurial, at least with their current business. This might be a reflection of the "newness" of the population. They are only ten years beyond graduation, and perhaps an examination of this sample after fifteen or twenty years might produce different results.[25] On the other hand, this might simply indicate that graduates wishing for more job security or stability seek other options, such as working for the government where job tenure is seen as a positive (see Table 10).

The Baccalaureate & Beyond data set attempted to get at the motivations of the students that they were sampling, and for the most part, the factors that these graduates identified as being important to them in 1993 matched up with their eventual employment choices in 2003. For example, those individuals who became self-employed were more likely to state that owning their own business was important to them (Table 6), and government workers desired more job security (Tables 6 and 10). Moreover, it is also encouraging, but not surprising, to see that one's choice of collegiate major is strongly associated with the likelihood of whether or not he or she becomes self-employed or works for a for-profit, not-for-profit, or government entity. If a student devotes a number of years to studying education, for instance, it is highly likely (and expected) that he or she would work for an educational institution, most of which are organized as a non-profit or part of the public sector. Few of these education majors would seek self-employment. Instead, the self-employed population has greater proportions of social science and "other" majors. In essence, students are often "self-selecting" their eventual outcome when they enroll in a given major.

[25] Moutray (2007) found a 4 percent increased probability of being self-employed if the head of household was 40 years old or greater. Many people choose to become entrepreneurial later in life, often after gaining experience in the field as an employee elsewhere.

The finding that business and management majors are either less likely (Table 8) or not significantly different than others (Tables 4 and 9) to pursue self-employment might come as a surprise to the hundreds of colleges and universities across the countries who now offer entrepreneurship programs.[26] Granted, most entrepreneurship curricula were still in their infancy in 1993 when these students were graduating from college, but it would be interesting for future research to determine if such coursework has or would produce a different finding. On the positive side, this conclusion should serve as a greater impetus for academic institutions to recognize that the self-employed stem from a wider variety of majors than is expected by conventional wisdom. Those graduates in social science and "other" majors might indeed need entrepreneurship coursework if this sample is indicative of current trends—something that many of them are currently not engaging in. As such, it reinforces the relevance of the current drive toward entrepreneurship-across-the-curriculum initiatives, which are becoming more commonplace.

To expand on this study further, future research would hopefully be able to delve even deeper into the characteristics of the self-employed relative to their academic training. It would be nice to know more about the social science or "other" fields whose graduates are pursuing self-employment. Those two categories account for over 46 percent of the students in this sample, and it might be helpful to further disentangle them from their aggregated analysis in this paper. In addition, the finding that ethnicity and race are not significant determinants for the employment choices of the class of 1993 is a surprise, especially given previous research and anecdotal evidence. For the self-employed, gender is also not a statistically significant determining factor. A study which further examines issues of race and gender might prove illuminating and help to further explain differences between this data set and others. Lastly, it would be interesting to examine how an individual's baccalaureate education further links to entrepreneurship and economic activity. A number of studies have done this with aggregated educational attainment variables, but few have linked such activity to individual academic performance.

This paper has examined the employment outcomes of the baccalaureate class of 1993. We have found that a student's choice of major is a determining factor regarding future employment, as one might expect. Moreover, students that pursued graduate education are less

[26] See Weaver, Dickson, and Solomon (2006) for a discussion on the growth of entrepreneurship programs.

likely to be self-employed ten years after graduation, and students with higher grade point averages are more likely to seek employment in the not-for-profit or government sectors. Finally, greater financial assets slightly increase the probability of self-employment, but significantly increase the odds of a worker being employed by a for-profit entity. At the same time, the self-employed tend to earn salaries that are either significantly lower or substantially higher than the overall population, suggesting that entrepreneurial occupations vary widely in terms of industrial make-up and compensation.

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Table 1: Demographic Comparisons of Baccalaureate & Beyond 1993–2003 Respondents by Employer Categories (Percentages except where noted)

	Employment Status in 2003				
	Total	**Self-Employed**	**For-Profit Entity**	**Not-for-Profit Entity**	**Government or Military**
Number of Observations	7,050	690	3,740	1,370	1,260
Age in 2003:					
Less than 35 years old	69.4	69.4	**72.2***	68.6	**62.3***
35 to 49 years old	24.9	25.7	24.2	**22.6‡**	**29.1***
50 to 59 years old	4.6	4.2	**3.1***	**7.0***	**6.6***
60 years old or older	1.0	0.7	**0.5***	**1.8†**	**2.1***
Gender:					
Male	46.4	**50.1†**	**53.6***	**29.5***	**41.2***
Female	53.3	**49.7†**	**46.0***	**70.1***	**58.5***
Race & Ethnicity:					
White, non-Hispanic	82.6	83.5	**84.5***	**81.1‡**	**78.1***
Black, non-Hispanic	5.3	4.5	**3.9***	**7.0***	**8.0***
Hispanic	4.3	3.4	**3.7‡**	**5.1‡**	**5.7†**
Asian or Pacific Islander	3.5	3.4	3.8	3.2	3.1
American Indian or Alaskan Native	0.7	0.7	0.6	**0.4‡**	**1.3†**
Other or non-resident alien	0.9	**1.5‡**	0.9	0.9	0.6
U.S. Citizen:	99.5	99.4	99.5	**99.2‡**	99.7
Marital Status in 2003:					
Single, never married	20.1	19.5	20.7	20.2	**18.2‡**
Married	68.1	69.7	68.2	67.0	**62.8***
Cohabitating or living with a partner	5.0	5.2	4.8	**5.9‡**	4.4
Separated, divorced, or widowed	6.8	**5.5‡**	6.2	6.9	**9.4***
Number of Children:					
No children	35.7	**31.9†**	36.8	36.6	**33.6‡**
1 to 3 children	56.9	57.0	57.1	55.2	58.0
4 or more children	5.0	**8.6***	**3.9***	5.6	5.6
Military Veteran in 1993:	3.7	**2.0†**	3.4	**2.8†**	**6.3***
Geographical Residence in 2003:					
Midwestern states	21.8	**18.5†**	**23.1‡**	22.0	**19.8‡**
Northeastern states	17.6	16.8	18.5	**20.6***	**12.4***
Southern states (including D.C.)	34.7	36.4	33.8	**32.9‡**	**38.5***
Western states	19.2	**24.3***	**17.9†**	**17.3†**	**22.3***
U.S. territories	0.7	0.7	0.5	0.6	**1.2†**
Foreign countries	1.0	1.3	1.0	1.3	**0.6‡**

Source: Baccalaureate & Beyond 1993/2003 including data from 1993, 1994, 1997, and 2003 from the U.S. Department of Education

Notes: For confidentiality reasons when using B&B data, the number of observations has been rounded to the nearest ten. Rounding error and/or nonresponses might prevent some columns from adding to 100 percent. The number of children includes both those within the household and those outside the household that can be claimed as dependents.

Geographic regions for states follow the definitions used by the U.S. Bureau of Labor Statistics. As such, these designations are:
Northeast—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont;
South—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia;
Midwest—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin;
West—Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
U.S. territories, as designated by the U.S. Department of Education include American Samoa, Federated State of Micronesia, Guam, Marshall Islands, Northern Mariana Islands, and Puerto Rico. American military bases are also included as a U.S. territory for this analysis.

* Differences between the total and this sub-group are significant at the 99% confidence level (one-tailed test).
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Table 2: Financial Comparisons of Baccalaureate & Beyond 1993/2003 Respondents by Employer Categories (Percentages except where noted)

	Employment Status in 2003				
	Total	**Self-Employed**	**For-Profit Entity**	**Not-for-Profit Entity**	**Government or Military**
Number of Observations	7,050	690	3,740	1,370	1,260
Current Job Salary in 2003:					
Less than $20,000	7.0	**15.9***	**5.1***	**9.3***	**5.2***
$20,000 to $39,999	24.4	**19.4***	**18.4***	**34.5***	**34.0***
$40,000 to $59,999	28.6	**19.7***	**26.3***	**32.0***	**36.5***
$60,000 to $79,999	19.0	**13.1***	**22.6***	**14.5***	**16.6†**
$80,000 to $99,999	9.9	9.9	**13.8***	**4.8***	**4.0***
$100,000 to $199,999	7.6	**14.1***	**10.0***	**2.5***	**2.3***
$200,000 or more	1.1	**4.1***	1.2	**0.2***	**0.2***
Total Household Income in 2003:					
Less than $20,000	4.7	**7.4***	4.2	5.2	**0.7***
$20,000 to $39,999	10.3	9.8	**8.7***	**13.1***	**12.1†**
$40,000 to $59,999	16.4	**14.4‡**	**14.0***	**21.0***	**19.8***
$60,000 to $79,999	17.8	**13.4***	**16.7‡**	**19.3‡**	**21.5***
$80,000 to $99,999	15.3	**11.8***	15.5	14.9	**17.0‡**
$100,000 to $199,999	26.2	**29.6†**	**30.3***	**19.4***	**19.4***
$200,000 or more	4.8	**7.9***	**6.0***	**2.6***	**1.7***
Own or rent home in 2003:					
Own home	72.2	74.2	73.0	**69.5†**	71.8
Rent home	21.4	**18.5†**	21.5	22.8	21.4
Neither own nor rent	3.8	**5.4†**	**3.0†**	**5.3***	3.8
Monthly rent or mortgage in 2003:					
No rent or mortgage payment	7.3	**9.3†**	**5.8***	**9.7***	8.1
$0 to 499	7.0	7.0	**6.0†**	**8.1‡**	**9.0***
$500 to $999	32.9	**27.0***	**30.9†**	**36.1†**	**38.7***
$1,000 to $1,499	25.0	24.3	**26.4‡**	24.0	**22.7†**
$1,500 to $1,999	11.5	**13.8†**	**12.8†**	**8.9***	**9.4†**
$2,000 to $2,499	5.7	5.1	**6.7†**	5.1	**3.5***
$2,500 or more	4.2	**7.3***	**4.9†**	**2.5***	**2.3***

Source: Baccalaureate & Beyond 1993/2003 including data from 1993, 1994, 1997, and 2003 from the U.S. Department of Education

Notes: For confidentiality reasons when using B&B data, the number of observations has been rounded to the nearest ten. Rounding error and/or nonresponses might prevent some columns from adding to 100 percent.

* Differences between the total and this sub-group are significant at the 99% confidence level (one-tailed test).
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Table 3: Occupational Comparisons of Baccalaureate & Beyond 1993/2003 Respondents by Employer Categories (Percentages except where noted)

	Employment Status in 2003				
	Total	**Self-Employed**	**For-Profit Entity**	**Not-for-Profit Entity**	**Government or Military**
Number of Observations	7,050	690	3,740	1,370	1,260
Self-Employed in 1997:	4.6	19.0	4.2	1.8	0.9
Years in Current Job (2003):					
0-2 years	30.9	**34.4†**	**32.5†**	32.6	**22.5***
3-4 years	22.2	21.0	22.2	22.9	21.9
5-9 years	32.7	32.4	32.6	31.1	**35.1†**
10-14 years	10.7	**7.9†**	10.1	10.0	**14.8***
15 years or more	3.0	**2.0‡**	**2.4†**	2.9	**5.6***
Industry for Job in 2003:					
Agriculture, forestry, and fisheries	1.3	**3.5***	1.1	**0.4***	1.4
Mining, petroleum, and drilling	0.5	0.3	**0.8†**	**0.1†**	**0***
Construction	2.8	**8.3***	**3.4†**	**0.4***	**0.8***
Manufacturing	6.8	**2.9***	**11.9***	**1.0***	**0***
Utilities	1.3	**0.3†**	**1.7†**	**0.5***	**1.3**
Wholesale distribution and recycling	0.8	0.4	**1.3†**	**0***	**0.1***
Retail trade	5.6	**7.7†**	**8.9***	**0.4***	**0.2***
Finance, insurance, and real estate	9.3	10.6	**13.5***	**4.6***	**1.2***
Business and personal services	4.6	**12.1***	**5.2‡**	**2.6***	**0.6***
Entertainment and recreational services	2.8	**5.8***	2.6	3.4	**1.2***
Professional and related services	15.3	16.9	15.3	**17.9***	**11.8***
Public administration and public safety	5.1	**0.6***	**0.4***	**1.5***	**25.3***
Health care	18.3	**14.1***	**15.0***	**35.4***	**11.7***
Communications	5.1	5.7	**7.9***	**1.4***	**0.2***
Transportation	1.7	**0.7†**	**2.5***	**0.4***	**1.0†**
Hospitality	1.7	2.3	**2.5***	**0.6***	**0***
Education	12.5	**3.5***	**2.2***	**25.4***	**33.9***
Military	1.6	**0.1***	**0.6***	**0.1***	**7.2***
Other	2.9	3.6	2.9	3.3	**1.8†**

Source: Baccalaureate & Beyond 1993/2003 including data from 1993, 1994, 1997, and 2003 from the U.S. Department of Education

Notes: For confidentiality reasons when using B&B data, the number of observations has been rounded to the nearest ten. Rounding error and/or nonresponses might prevent some columns from adding to 100 percent.

* Differences between the total and this sub-group are significant at the 99% confidence level (one-tailed test).
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Table 4: Undergraduate Education Comparison of Baccalaureate & Beyond 1993/2003 Respondents by Employer Categories (Percentages except where noted)

	Employment Status in 2003				
	Total	**Self-Employed**	**For-Profit Entity**	**Not-for-Profit Entity**	**Government or Military**
Number of Observations	7,050	690	3,740	1,370	1,260
Undergraduate Major:					
Business and management	13.9	14.1	**17.6***	**10.0***	**7.1***
Education	9.4	9.2	**6.1***	**12.7***	**15.9***
Engineering, math, and science	14.9	**9.6***	**19.9***	**7.4***	**11.0***
Health and biological sciences	15.3	13.8	**12.5***	**23.5***	15.4
Social science fields	31.5	**34.5‡**	**28.3***	**33.8†**	**36.8***
Other	15.0	**18.7***	15.7	**12.5***	13.8
Undergraduate Grades (All Courses):					
Mostly As	12.6	11.1	**10.7***	**16.3***	**14.8†**
As & Bs	29.4	30.0	28.3	30.8	31.0
Mostly Bs	40.8	42.9	**42.1‡**	**38.8‡**	**38.3†**
Bs & Cs	12.7	12.2	**14.2†**	**9.4***	11.8
Mostly Cs	2.0	2.0	2.3	1.7	**1.3†**
Cs & Ds	0.2	0.1	0.1	0.2	0.3
Mostly Ds or below	0.3	0.3	0.3	0.4	0.3
Undergraduate Grades (Major):					
Mostly As	22.6	21.9	**20.0***	**26.0***	**26.7***
As & Bs	28.6	28.4	27.8	**30.3‡**	29.1
Mostly Bs	38.0	40.1	**40.6***	**33.7***	**33.8***
Bs & Cs	6.6	5.4	**7.3‡**	**5.3†**	6.3
Mostly Cs	1.2	1.0	1.4	1.0	1.2
Cs & Ds	0.2	0.1	0.2	0.1	0.3
Mostly Ds or below	0.3	0.3	0.2	0.3	0.3
College or University Carnegie Classifications (1994 Definitions):					
Research I & II	31.7	**34.1‡**	**34.2***	**26.2***	**28.6†**
Doctoral I & II	11.9	10.3	**12.9†**	**10.3†**	11.3
Master's (comprehensive) I & II	32.5	30.6	**30.8†**	33.3	**37.7***
Baccalaureate (liberal arts) I & II	17.3	17.3	**15.9†**	**22.3***	15.9
Professional & specialized institutions	3.5	3.9	3.1	**4.8***	**2.7‡**
Tuition & Fees Per Term (Actual Amounts Charged to the Student):					
Less than $1,000	16.5	17.5	16.2	**15.0‡**	**18.6†**
$1,000 to $2,499	30.2	29.7	30.1	**27.2†**	**34.2***
$2,500 to $4,999	18.8	19.1	19.7	**17.0‡**	17.8
$5,000 to $9,999	13.7	14.1	13.1	**16.0†**	13.2
$10,000 to $14,999	10.6	11.1	10.4	**12.8***	**8.6†**
$15,000 or greater	7.2	6.1	7.6	**9.0†**	**4.4***
College Life (1992-1993 school year):					
Internship	24.8	25.8	**23.3†**	**28.6***	25.1
Job on or off campus	79.4	78.9	80.0	78.5	79.1
Job on or off campus, in major	37.0	36.4	36.1	**39.1‡**	38.0
Athletic scholarship	1.1	**1.7‡**	1.1	1.2	1.0
National merit scholarship	0.3	0.1	0.3	0.3	**0.6†**
Undergraduate Education Evaluation, 10 years later (2003):					
Undergraduate education: worth the cost	89.4	89.7	88.7	90.0	**90.8‡**
Undergraduate education: worth the effort	95.4	**94.3‡**	95.2	**96.5†**	95.4
Undergraduate education: worth the time	93.0	91.7	92.6	**94.5†**	93.3
Undergraduate preparation: establishing your financial security	56.2	**47.1***	**58.5†**	54.7	56.1
Undergraduate preparation: further education	56.8	**51.5***	**51.5***	**67.0***	**64.5***
Undergraduate preparation: work and career	77.6	**68.7***	76.7	**80.8***	**81.6***
Undergraduate value: internship and other work	41.9	40.4	**39.5***	**47.6***	43.5
Undergraduate value: liberal arts courses	37.8	37.8	**36.2†**	**42.3***	37.4
Undergraduate value: major courses	57.3	**52.3***	**55.0†**	**62.5***	**61.1***
Undergraduate value: instruction quality	61.3	59.2	**59.3†**	**67.0***	62.4

Notes to Table 4:

Source: Baccalaureate & Beyond 1993/2003 including data from 1993, 1994, 1997, and 2003 from the U.S. Department of Education

Notes: For confidentiality reasons when using B&B data, the number of observations has been rounded to the nearest ten. Rounding error and/or nonresponses might prevent some columns from adding to 100 percent. Social science fields include those individuals who majored in history, humanities, political affairs, psychology, and other social science disciplines. Carnegie classifications follow the 1994 definitions; see http://sestat.nsf.gov/docs/carnegie.html for more details. Professional schools and specialized institutions include religious, medical, engineering, business, fine arts, and teacher-dedicated institutions.

* Differences between the total and this sub-group are significant at the 99% confidence level (one-tailed test).
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Table 5: Comparisons of Baccalaureate & Beyond 1993/2003 Respondents by Employer Categories—Undergraduate Grade Point Averages (GPAs) by Subject (Average among Those with Responses) (Average GPA with Number of Observations and Standard Deviation)

	Employment Status in 2003				
	Total	**Self-Employed**	**For-Profit Entity**	**Not-for-Profit Entity**	**Government or Military**
Foreign language	3.03 (n=2910, 0.8086)	3.00 (n=280, 0.8132)	3.00 (n=1510, 0.8297)	**3.12*** (n=610, 0.7724)	3.05 (n=510, 0.7785)
Mathematics	2.64 (n=4700, 0.9388)	**2.58‡** (n=440, 0.9659)	2.64 (n=2630, 0.9196)	2.66 (n=820, 0.9596)	2.62 (n=810, 0.9644)
Business	2.90 (n=3000, 0.7839)	2.86 (n=300, 0.8008)	2.89 (n=1860, 0.7657)	2.92 (n=410, 0.8190)	2.95 (n=430, 0.8153)
Computer science	3.04 (n=3550, 0.8474)	3.00 (n=340, 0.8488)	3.03 (n=2130, 0.8263)	3.03 (n=530, 0.8747)	3.07 (n=550, 0.8992)
Science & engineering	2.74 (n=5750, 0.7800)	**2.66†** (n=560, 0.7765)	2.73 (n=3100, 0.7763)	**2.79†** (n=1080, 0.7854)	2.77 (n=1000, 0.7850)
Social science	2.98 (n=6500, 0.6413)	**2.94‡** (n=640, 0.6349)	2.95 (n=3460, 0.6472)	**3.05*** (n=1240, 0.6245)	**3.05*** (n=1170, 0.6343)
Statistics	2.84 (n=3170, 0.9158)	**2.76‡** (n=270, 0.9766)	2.84 (n=1840, 0.9056)	**2.91†** (n=550, 0.9134)	2.86 (n=510, 0.9200)

Source: Baccalaureate & Beyond 1993/2003 including data from 1993, 1994, 1997, and 2003 from the U.S. Department of Education

Notes: For confidentiality reasons when using B&B data, the number of observations has been rounded to the nearest ten.

* Differences between the total and this sub-group are significant at the 99% confidence level (one-tailed test).
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Table 6: Comparisons of Baccalaureate & Beyond 1993/2003 Respondents by Employer Categories—Graduate Degree Attainment by 2003 (Percentages except where noted)

	Employment Status in 2003				
	Total	**Self-Employed**	**For-Profit Entity**	**Not-for-Profit Entity**	**Government or Military**
Number of Observations	7,050	690	3,740	1,370	1,260
Graduate Degree Attainment or Current Status as of 2003:					
No graduate enrollment	57.7	**63.3***	**64.2***	**48.3***	**45.6***
Attained master's degree	18.9	**14.6***	**15.5***	**24.7***	**24.7***
Attained professional degree	5.2	**8.3***	4.8	4.4	5.2
Attained doctoral degree	2.8	**1.3***	**1.8***	**4.5***	**4.8***
Currently enrolled, master's program	3.5	**0.6***	3.1	4.1	**5.7***
Currently enrolled, professional degree	0.6	0.3	0.5	0.6	**1.0‡**
Currently enrolled, doctorate program	1.3	1.0	**0.5***	**2.5***	**2.8***
No attainment, previously enrolled	9.9	10.5	9.4	10.8	10.1

Source: Baccalaureate & Beyond 1993/2003 including data from 1993, 1994, 1997, and 2003 from the U.S. Department of Education

Note: For confidentiality reasons when using B&B data, the number of observations has been rounded to the nearest ten. Rounding error and/or nonresponses might prevent some columns from adding to 100 percent.

* Differences between the total and this sub-group are significant at the 99% confidence level (one-tailed test).
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Table 7: Comparisons of Baccalaureate & Beyond 1993/2003 Respondents by Employer Categories—Attitudinal Questions, 1992-1993 School Year (Percentages except where noted)

	Employment Status in 2003				
	Total	**Self-Employed**	**For-Profit Entity**	**Not-for-Profit Entity**	**Government or Military**
Number of Observations	7,050	690	3,740	1,370	1,260
Percent stating that this factor is important to them, in general:					
Ability to find steady work	78.5	**74.1***	79.4	77.8	79.0
Becoming an authority in your field	61.9	60.1	62.7	**60.0‡**	62.6
Being a leader in the community	50.3	48.4	49.4	51.9	51.9
Being successful in your line of work	80.7	**76.7***	81.5	80.6	80.8
Being well-off financially	51.6	**48.5‡**	**56.7***	**44.9***	**45.4***
Getting away from where you grew up	22.6	22.6	22.3	23.7	22.2
To have children	62.0	62.4	61.7	63.4	61.1
Having more leisure time	77.6	**74.5†**	78.1	77.8	77.6
To influence the political structure	32.2	34.0	**29.2***	**35.8***	**36.3***
To live close to parents and relatives	37.3	37.8	36.2	**40.7***	36.9
Owning your own business	26.8	**39.8***	**29.3***	**20.7***	**18.6***
Percent stating that this factor is important for them in considering their choice of work in the future:					
Allows roots to be established	5.0	4.7	4.8	4.7	**5.9‡**
Freedom to make own decisions	5.8	6.3	6.3	5.2	5.1
Good income potential over career	17.2	17.8	17.0	17.0	17.5
Good income to start	26.5	27.7	**28.4†**	**22.1***	25.0
Great deal of travel	2.4	3.1	2.7	**1.5†**	2.1
Ability to work independently	4.6	3.9	4.4	4.9	5.1
Intellectually challenging work	12.7	11.8	**10.5***	**17.7***	**14.1‡**
Interaction with people	40.3	38.5	40.0	41.3	41.0
Interesting work	18.2	**16.2‡**	18.9	17.3	18.2
Job security	15.8	16.5	**16.8‡**	**14.0†**	**14.1‡**
Prestige and status	6.4	7.1	6.2	6.2	6.7
Previous work experience in the area	14.3	**12.0†**	14.0	15.2	15.4
Time for extracurricular activities	3.8	4.4	3.5	**4.6‡**	3.6

Source: Baccalaureate & Beyond 1993/2003 including data from 1993, 1994, 1997, and 2003 from the U.S. Department of Education

Note: For confidentiality reasons when using B&B data, the number of observations has been rounded to the nearest ten. Rounding error and/or nonresponses might prevent some columns from adding to 100 percent.

* Differences between the total and this sub-group are significant at the 99% confidence level (one-tailed test).
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Table 8: Multivariate Logit Analysis using Baccalaureate & Beyond 1993/2003 Data Dependent Variable: Likelihood of a Certain Employment Outcome in 2003 (Ten Years Beyond Graduation)

SAME INDEPENDENT VARIABLES VERSION

	Likelihood of Being Self-Employed		**Likelihood of Working for a For-Profit Entity**		**Likelihood of Working for a Not-for-Profit Entity**		**Likelihood of Working for the Government/Military**	
	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit
Constant	**-2.2838 (0.2509)***	--	-0.1763 (0.1467)	--	**-2.2237 (0.2021)***	--	**-0.7669 (0.1789)***	--
Demographic variables:								
Born before 1967	-0.1389 (0.1033)	-0.0112	**-0.3397 (0.0653)***	**-0.0846**	**0.1527 (0.0773)†**	**0.0203**	**0.4181 (0.0777)***	**0.0557**
Male	0.0393 (0.0813)	0.0033	**0.1296 (0.0519)†**	**0.0321**	**-0.1931 (0.0642)***	**-0.0248**	-0.0302 (0.0664)	-0.0037
White	0.0949 (0.1091)	0.0077	-0.0304 (0.0684)	-0.0075	-0.0559 (0.0834)	-0.0073	0.0525 (0.0888)	0.0063
Single	**-0.2475 (0.1107)†**	**-0.01936**	-0.0564 (0.0702)	-0.0140	0.1326 (0.0866)	0.0176	0.1391 (0.0922)	0.0175
# of Children	**-0.0721 (0.0346)†**	**-0.0060**	0.0265 (0.0214)	0.0066	**0.0585 (0.0254)†**	**0.0075**	**-0.0695 (0.0278)†**	**-0.0085**
Financial variables:								
Salary (2003, in ten thousands)	-0.0002 (0.0006)	-0.00002	**0.0107 (0.0008)***	**0.0026**	**-0.0112 (0.0010)***	**-0.0014**	**-0.0080 (0.0010)***	**-0.0010**
Own their home	0.0665 (0.0918)	0.0055	**0.1069 (0.0577)‡**	**0.0266**	**-0.1593 (0.0697)†**	**-0.0211**	-0.0330 (0.0733)	-0.0041
Job-specific variables:								
# of years in current job	**-0.0387 (0.0107)***	**-0.0032**	**-0.0237 (0.0060)***	**-0.0059**	-0.0119 (0.0076)	-0.0015	0.0638 (0.0069)*	0.0078
Goods sector job	**0.9530 (0.1984)***	**0.1069**	**1.3813 (0.1208)***	**0.2976**	**-0.9143 (0.2365)***	**-0.0922**	**-2.7011 (0.2098)***	**-0.1694**
"Soft" service sector job	**0.6853 (0.1733)***	**0.0490**	-0.0430 (0.0834)	-0.0107	**1.2257 (0.1344)***	**0.1257**	**-1.0365 (0.0880)***	**-0.1550**
Bachelor's degree variables:								
Business/management major	**-0.2544 (0.1500)‡**	**-0.0196**	**0.5076 (0.1005)***	**0.1223**	-0.0725 (0.1339)	-0.0092	**-0.7873 (0.1481)***	**-0.0786**
Education major	**-0.3512 (0.1686)†**	**-0.0260**	**-0.8509 (0.1114)***	**-0.2081**	**0.6803 (0.1303)***	**0.1054**	**0.6686 (0.1288)***	**0.0985**
Engineering, math, or science major	**0.8607 (0.1688)***	**-0.0565**	**0.7254 (0.1030)***	**0.1716**	**-0.5175 (0.1447)***	**-0.0588**	**-0.2763 (0.1361)†**	**-0.0315**
Health or biology major	**-0.3554 (0.1453)†**	**-0.0267**	**-0.4257 (0.0927)***	**-0.1060**	**0.8514 (0.1125)***	**0.1336**	-0.0677 (0.1220)	-0.0081
Social science major	-0.1555 (0.1203)	-0.0126	**-0.2727 (0.0804)***	**-0.0678**	**0.3388 (0.1040)***	**0.0457**	**0.1903 (0.1041)‡**	**0.0239**
Overall grades: mostly A's	**-0.2684 (0.1438)‡**	**-0.0205**	-0.0195 (0.0863)	-0.0048	0.1415 (0.1050)	0.0189	0.0386 (0.1091)	0.0048
Overall grades: mostly B's & C's	-0.0006 (0.0889)	-0.0001	-0.0234 (0.0573)	-0.0058	0.0368 (0.0711)	0.0047	-0.0167 (0.0733)	-0.0020
Graduate degree variables:								
Earned or currently enrolled, master's	**-0.2527 (0.0954)***	**-0.0201**	**-0.4353 (0.0579)***	**-0.1082**	**0.3476 (0.0694)***	**0.0473**	**0.4666 (0.0709)***	**0.0614**
Earned or currently enrolled, doctorate	**-0.5915 (0.2638)†**	**-0.0395**	**-1.1802 (0.1425)***	**-0.2781**	**0.8650 (0.1410)***	**0.1439**	**0.8700 (0.1410)***	**0.1387**
Logit regression statistics:								
# of observations	7,050		7,050		7,050		7,050	
Log likelihood	-2202.0125		-4329.7843		-3103.0483		-2946.3689	
Chi-squared	**95.58***		**1088.05***		**723.00***		**729.59***	
Pseudo R-squared	0.0212		0.1116		0.1043		0.1102	

* Significant at the 99% confidence level.
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Note: Nongovernmental "soft" service sector industries used in this analysis of B&B data include the following industries: retail trade – sales and rental; finance, insurance, and real estate; business services; personal services; entertainment and recreation services; professional and related services; health care; communications; hospitality; and education.

Table 9: Multivariate Logit Analysis using Baccalaureate & Beyond 1993/2003 Data Dependent Variable: Likelihood of a Certain Employment Outcome in 2003 (Ten Years Beyond Graduation)

BEST FIT FOR EACH MODEL VERSION

	Likelihood of Being Self-Employed		**Likelihood of Working for a For-Profit Entity**		**Likelihood of Working for a Not-for-Profit Entity**		**Likelihood of Working for the Government/Military**	
	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit
Constant	**-2.5462 (0.1862)***	--	**-0.2124 (0.0933)†**	--	**-2.2624 (0.1652)***	--	**-1.7062 (0.1021)***	--
Demographic variables:								
Born before 1967			**-0.3386 (0.0648)***	**-0.0843**	**0.1387 (0.0768)‡**	**0.0185**	**0.4427 (0.0768)***	**0.0603**
Male			**0.1263 (0.0518)†**	**0.0313**	**-0.1949 (0.0641)***	**-0.0251**		
Single	**-0.2064 (0.1039)†**	**-0.01636**					**0.1803 (0.0917)†**	**0.0233**
Separated, divorced, or widowed							**0.6897 (0.1401)***	**0.1050**
# of Children					**0.0508 (0.0243)†**	**0.0066**	**-0.1327 (0.0305)***	**-0.0165**
Financial variables:								
Salary (2003, in ten thousands)			**0.1066 (0.0075)***	**0.0264**	**-0.1126 (0.0101)***	**-0.0146**	**-0.0773 (0.0100)***	**-0.0096**
Household income (2003, in ten thousands)	**0.0106 (0.0048)†**	**0.0009**						
Own their home			**0.1022 (0.0576)‡**	**0.0254**	**-0.1562 (0.0696)†**	**-0.0207**		
Job-specific variables:								
# of years in current job	**-0.0384 (0.0106)***	**-0.0032**	**-0.0231 (0.0060)***	**-0.0057**			**0.0656 (0.0068)***	**0.0082**
Goods sector job	**0.9557 (0.1981)***	**0.1076**	**1.4166 (0.0961)***	**0.3035**	**-0.9037 (0.2363)***	**-0.0916**	**-1.8195 (0.1970)***	**-0.1402**
"Soft" service sector job	**0.6942 (0.1731)***	**0.0497**			**1.2319 (0.1342)***	**0.1264**		
Bachelor's degree variables:								
Business/management major			**0.4637 (0.0962)***	**0.1121**			**-0.6948 (0.1331)**	**-0.0723**
Education major			**-0.8670 (0.1084)***	**-0.2118**	**0.6604 (0.1131)***	**0.1020**	**0.7531 (0.1102)***	**0.1150**
Engineering, math, or science major	**-0.6180 (0.1379)***	**-0.0434**	**0.6995 (0.0973)***	**0.1659**	**-0.5420 (0.1285)***	**-0.0614**	**-0.2449 (0.1177)†**	**-0.0286**
Health or biology major	**-0.0159 (0.0087)‡**	**-0.0159**	**-0.4399 (0.0920)***	**-0.1095**	**0.8526 (0.0953)***	**0.1340**		
Social science major			**-0.2949 (0.0789)***	**-0.0733**	**0.3563 (0.0846)***	**0.0483**	**0.2297 (0.0813)***	**0.0294**
Overall grades: mostly A's	**-0.2567 (0.1316)‡**	**-0.0198**						
Graduate degree variables:								
Earned or currently enrolled, master's	**-0.2589 (0.0950)***	**-0.0206**	**-0.4318 (0.0578)***	**-0.1074**	**0.3403 (0.0692)***	**0.0464**	**0.4664 (0.0700)***	**0.0623**
Earned or currently enrolled, doctorate	**-0.5816 (0.1862)†**	**-0.0391**	**-1.1761 (0.1423)***	**-0.2773**	**0.8469 (0.1407)***	**0.1404**	**0.9142 (0.1384)***	**0.1494**
Logit regression statistics:								
# of observations	7,050		7,050		7,050		7,050	
Log likelihood	-2205.2963		-4331.4338		-3106.7255		-3000.8444	
Chi-squared	**86.61***		**1084.75***		**715.65***		**620.64***	
Pseudo R-squared	0.0192		0.1113		0.1033		0.0937	

* Significant at the 99% confidence level.
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Note: Nongovernmental "soft" service sector industries used in this analysis of B&B data include the following industries: retail trade – sales and rental; finance, insurance, and real estate; business services; personal services; entertainment and recreation services; professional and related services; health care; communications; hospitality; and education.

Table 10: Multivariate Logit Analysis using Baccalaureate & Beyond 1993/2003 Data Dependent Variable: Likelihood of a Certain Employment Outcome in 2003 (Ten Years Beyond Graduation)

BEST FIT FOR EACH MODEL VERSION WITH MOTIVATIONAL FACTORS INCLUDED

	Likelihood of Being Self-Employed		**Likelihood of Working for a For-Profit Entity**		**Likelihood of Working for a Not-for-Profit Entity**		**Likelihood of Working for the Government/Military**	
	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit	Coefficient estimate/ standard error	Marginal effects after logit
Constant	**-2.7292 (0.2090)***	--	-0.1546 (0.0988)	--	**-2.2647 (0.1673)***	--	**-1.7358 (0.1035)***	--
Demographic variables:								
Born before 1967			**-0.3385 (0.0648)***	**-0.0843**	**0.1362 (0.0769)‡**	**0.0181**	**0.4439 (0.0768)***	**0.0604**
Male			**0.1274 (0.0518)†**	**0.0316**	**-0.1979**	**-0.0254**		
Single	**-0.2065 (0.1039)†**	**-0.0163**					**0.1850 (0.0918)†**	**0.0239**
Separated, divorced, or widowed							**0.6886 (0.1401)***	**0.1047**
# of Children					**0.0504 (0.0244)†**	**0.0065**	**-0.1328 (0.0305)***	**-0.0165**
Financial variables:								
Salary (2003, in ten thousands)			**0.1065 (0.0075)***	**0.0264**	**-0.1126 (0.0101)***	**-0.0145**	**-0.0777 (0.0100)***	**-0.0096**
Household income (2003, in ten thousands)	**0.0106 (0.0048)†**	**0.0009**						
Own their home			**0.1024 (0.0576)‡**	**0.0254**	**-0.1550 (0.0697)†**	**-0.0205**		
Job-specific variables:								
# of years in current job	**-0.0386 (0.0107)***	**-0.0032**	**-0.0231 (0.0060)**	**-0.0057**			**0.0658 (0.0068)***	**0.0082**
Goods sector job	**0.9721 (0.1984)***	**0.1094**	**1.4168 (0.0961)***	**0.3036**	**-0.9056 (0.2365)***	**-0.0915**	**-1.8177 (0.1977)***	**-0.1400**
"Soft" service sector job	**0.7051 (0.1733)***	**0.0501**			**1.2365 (0.1345)***	**0.1264**		
Bachelor's degree variables:								
Business/management major			**0.4649 (0.0963)***	**0.1124**			**-0.6954 (0.1332)***	**-0.0723**
Education major			**-0.8668 (0.1084)***	**-0.2118**	**0.6608 (0.1131)***	**0.1018**	**0.7542 (0.1102)***	**0.1151**
Engineering, math, or science major	**-0.6177 (0.1380)***	**-0.0431**	**0.6956 (0.0974)***	**0.1650**	**-0.5453 (0.1286)***	**-0.0615**	**-0.2405 (0.1177)†**	**-0.0281**
Health or biology major	**-0.2094 (0.1179)‡**	**-0.0164**	**-0.4375 (0.0920)***	**-0.1089**	**0.8584 (0.0954)***	**0.1348**		
Social science major			**-0.2942 (0.0789)***	**-0.0731**	**0.3513 (0.0847)***	**0.0474**	**0.2320 (0.0813)***	**0.0297**
Overall grades: mostly A's	**-0.2465 (0.1317)‡**	**-0.0189**						
Graduate degree variables:								
Earned or currently enrolled, master's	**-0.2595 (0.0951)***	**-0.0205**	**-0.4309 (0.0578)***	**-0.1071**	**0.3409 (0.0693)***	**0.0463**	**0.4698 (0.0700)***	**0.0628**
Earned or currently enrolled, doctorate	**-0.5719 (0.2635)†**	**-0.0383**	**-1.1778 (0.1424)***	**-0.2776**	**0.8518 (0.1407)***	**0.1411**	**0.9135 (0.1385)***	**0.1491**
Motivational factors (1992-1993 School Year):								
Prestige and status are important	**-0.4772 (0.1951)†**	**-0.0334**						
Important to become an authority in their field			**-0.0947 (0.0532)‡**	**-0.0235**				
Important to do intellectually challenging work					**0.2499 (0.0918)***	**0.0344**		
Important to get away from where they grew up					**-0.1516 (0.0778)†**	**-0.0190**		
Job security is important							**0.1614 (0.0872)‡**	**0.0208**
Logit regression statistics:								
# of observations	7,050		7,050		7,050		7,050	
Log likelihood	-2199.8740		-4329.8503		-3101.5343		-2999.1603	
Chi-squared	**99.85***		**1087.92***		**726.03***		**624.00***	
Pseudo R-squared	0.0222		0.1116		0.1048		0.0942	

* Significant at the 99% confidence level.
† Significant at the 95% confidence level.
‡ Significant at the 90% confidence level.

Note: Nongovernmental "soft" service sector industries used in this analysis of B&B data include the following industries: retail trade – sales and rental; finance, insurance, and real estate; business services; personal services; entertainment and recreation services; professional and related services; health care; communications; hospitality; and education.