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Factors Affecting the Quality of University Graduates' Jobs

by

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Introduction

Independent of their chosen program of studies, many students enter Canadian universities assuming that their education will help them get jobs. Many academics and university administrators believe the same thing. While research confirms that university graduates are more likely than others to find employment, to date, there is no Canadian research that attempts to examine the relationship between measures of achievement, such as grade point averages (GPA) and the development of generic skills, with the jobs of graduates.

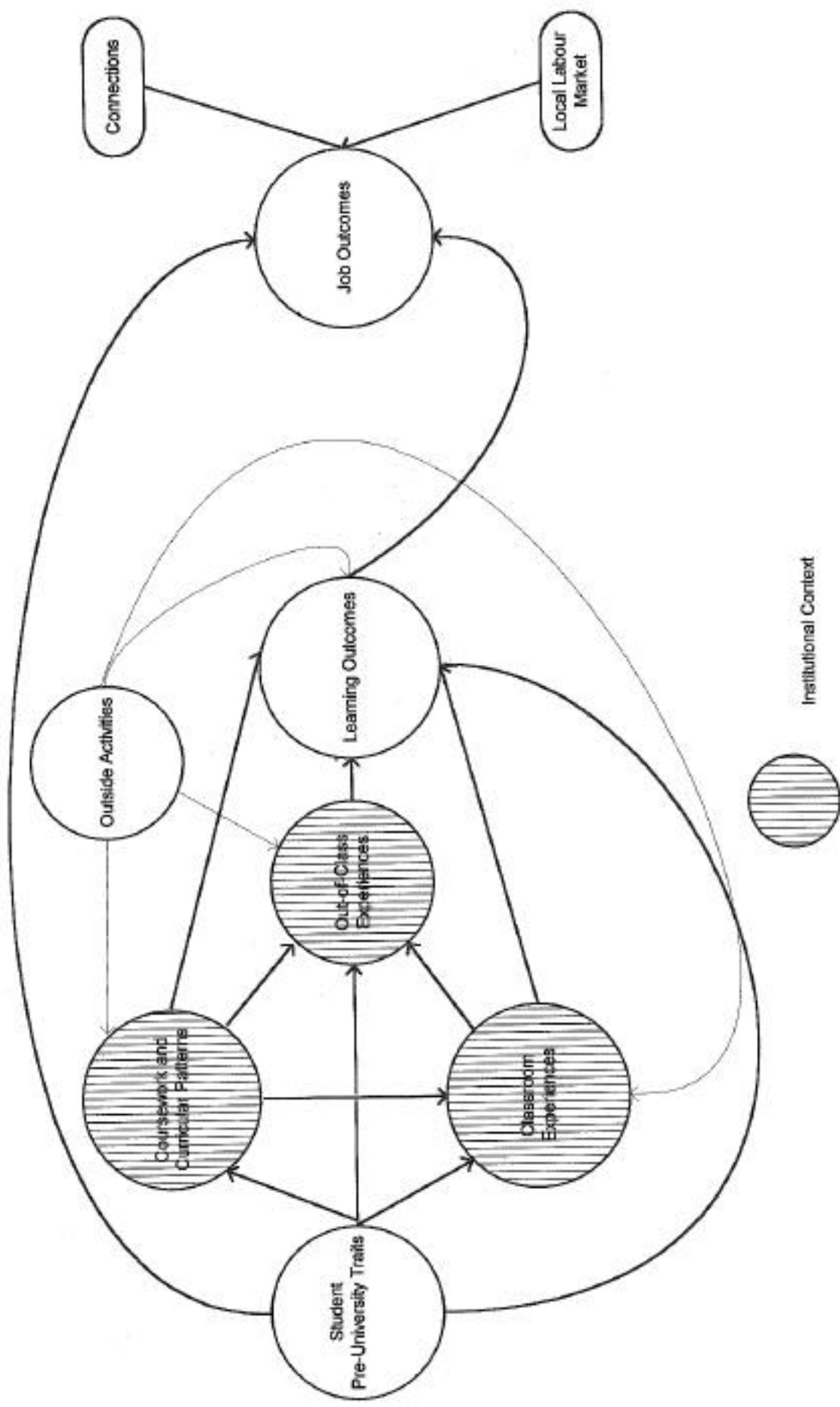
In this article attention will focus on the extent to which students' backgrounds, university learning experiences, education beyond a first degree, and having 'contacts' affect a number of job outcomes, such as job satisfaction, the relation of jobs to education, income, job security, and ability to get a 'healthy' job. Data for the study were collected from graduates of York University at the time of graduation and two years later.

Background

There are three types of research that help us understand the relationship between university outcomes and graduates' job experiences. The first focuses on the factors contributing to desirable educational outcomes and the outcomes themselves. To take one example, in the 'college impact model', Terenzini et al (1996) postulate that with student pre-college traits (e.g., parental education) held constant, coursework and curricular patterns, classroom experiences, and out-of-class experiences (that collectively can be viewed as institutional experiences), contribute to various learning outcomes, such as the development of analytic, communication, personal, organizing, comparative, math, and computer skills; and the acquisition of subject matter expertise. Others (Astin, 1993; Pascarella and Terenzini, 1991) have found similar relationships.

The second type of research examines the experiences of Canadians once they leave the university and in some instances looks at the relationship between university outcomes, such as field of study, and the types of jobs obtained. These national and university specific studies have also shown that almost half of graduates enrol in other programs of post-secondary study (BCU, 1996:2; Murphy and Coffin, 1996:1; Finnie, 1993:2). Growing numbers leave university with large debts (Clark, 1998). Of those who enter the labour force, most have jobs within two years (BCU, 1996:7; Murphy and Coffin, 1996:5; Lapierre and Little, 1996:18). For some graduates friends/relatives, former employers, and networking are important in helping them obtain work (Murphy and Coffin, 1996:1; McMaster, 1995:8). Engineering and math and science graduates are most likely to be employed full time (Finnie, 1993:9). Women are more likely than men to be part-time employees and the earning gap between women and men increases over time (Finnie,

Diagram 2: Extended Model of University Impact



1993:2-3). Most find work related to their field of study (Lapierre and Little, 1996:47) and the majority are satisfied with their jobs (BCU, 1996:6). Unfortunately, findings such as these are seldom linked to educational experiences and outcomes such as those mentioned above in a systematic fashion.

The third body of research that will be relied on makes a link between job-place autonomy, the opportunity to use skills, a supportive social environment, and health. More specifically, Karasek's and Theorell's (1990) 'demand-control model' postulates that negative health outcomes are likely when job demands are high and a worker's control over the job is low. While the work has been challenged, Karasek's and Theorell's general proposition has been found to be sound (Shreurs, et al, 1998; Seibt, et al, 1998; Smith, et al, 1997; Baker, et al, 1996; Xie, 1996; Greenlund, et al, 1995; Landsbergis, et al, 1992).

So far, researchers examining the labour force experiences of graduates in Canada have not linked the general insights obtained from these bodies of research into a coherent whole. The possible connections among factors explicit or implicit in these studies are outlined in Diagram 1 (see across) and have been described elsewhere (Grayson, 1999a).

In this article, the model in Diagram 1 will be used as a *general* vehicle designed to assist in the study of job outcomes – the intent is not to test the model. Moreover, attention will only focus on factors that have *direct links* to job outcomes: pre-university traits, learning outcomes, connections, and local labour market conditions.

One of the main ideas behind the model in Diagram 1 is that a number of factors and experiences can affect job outcomes either directly or indirectly. One of the most important of these factors is 'learning outcomes'. As seen in Diagram 1, these can be affected by a number of things.

Starting on the left side of the diagram, the first of these is 'student pre-university traits' that includes factors such as previous levels of academic achievement (high school marks for example), gender, ethno-racial origin, family income, parental education, type of high school program (gifted or advanced in Ontario), and type of high school attended (public, separate, or private in Ontario). Research that supports the inclusion of these factors in examining university outcomes has been carried out by Hall and Sandler, (1982), Sedlacek (1987), Ratcliff et al (1991), and Astin and Astin (1992).

'Coursework and curricular patterns' includes general area of study (Arts, Science, etc.) as well as specific course constellations taken within these areas. By 'classroom experiences' is meant the way courses are taught (lecture, seminar, studio) as well as the expertise of the instructors (organized, clear, fair, etc.) and the social climate of the classroom (e.g., supportive, competitive). Work by Tobias (1990) and Goodsell et al (1992) confirms the importance of coursework and curricular patterns in understanding learning outcomes.

'Out-of-class experiences' can be of either an academic or social nature. Among the former are contacts with faculty in the office, in the hall, and so on, as well as participation in non-required activities such as attending a talk by a visiting professor. Social experiences run the gamut from having a coffee with a friend between classes to participating in cultural and sports activities on campus. The many studies that have focussed on out of class experiences include Cohen (1981), Slavin (1989-90), Pascarella and Terenzini (1991), Astin (1993), Terenzini, Pascarella, and Blimling (1996), Pascarella et al (1996), and Tinto (1997),

'Learning outcomes' themselves include finishing a degree, gaining expertise in a field such as physics or history, as well as developing more general skills like problem solving, communication, and the ability to work with others.

In the diagram, learning outcomes are linked to 'job outcomes'. It is fair to say that most readers would like to believe that students who study hard, get good marks, and develop various skills would be the most likely to get jobs as their reward. Some U.S. research, however, shows that, for example, university grades are poor predictors of both the ability to get a job and earnings (Cappelli, 1992). By comparison, it has been shown that getting a job soon after graduation is related to parental income (Grayson, 1997). Moreover, it is self-evident that graduates of fields like engineering are more likely to get engineering jobs than sociology graduates.

Two other potential influences on job outcomes are 'connections' (McMaster, 1995; Murphy and Coffin, 1996) and local labour market conditions. Students who have connections of various sorts may be more likely to get a job soon after graduation than those who must rely exclusively on their own efforts. Also, the likelihood of getting a job soon after graduation is greater if unemployment is low than if many people are out of work (i.e., it is affected by local labour market conditions).

In this study, attention will focus on the degree to which various pre-university characteristics, learning outcomes (including further education), and connections affect job outcomes two years after graduation. Despite some findings to the contrary, for heuristic purposes it is assumed that graduates from advantaged backgrounds, who do well in school, who take further education, and who have connections will end up with jobs that are satisfying, are related to graduates' education, pay well, are secure, and healthy. As students studied are from York University in Toronto, we can assume that the local labour market is the same for all.

The Sample

In November 1995, a mail survey was carried out of all Fall graduates of York University in the faculties of Arts, Fine Arts, Pure and Applied Science, and the Schulich School of Business (SSB). The same survey was administered to all graduates of the same faculties in June, 1996. The respondents to the combined surveys numbered 2,211 (response rate of 51%). Two years later, in November 1997, and June 1998, it was possible to locate and re-interview by telephone 1,434 of the respondents to the first surveys. The response rate for this second survey was 81%. A comparison of respondents in the first and second surveys indicated no statistically significant differences based on faculty, gender, family income, and cumulative grade point average (GPA).

Survey results show that two years after graduation, a bare majority of survey respondents, 50.6%, were employed full-time. A further 26.9% were still students. Six percent were self-employed, 4.8% were working part-time by choice and 6.2% reported working part-time of necessity. In total, only 2.5% were unemployed and looking for work. An additional 2.9% were doing 'other' things.

Pre-university Traits

Information in Table 1 (see appendices), that focuses only on survey respondents who were employed at the time of the second survey (i.e., they were employed full- or part-time) shows that the average age of respondents was 27. Seventy percent were female; 73% were of European origin, 5% were Black, 5% were of South Asian origin, 6% said they were of Chinese origin, and 11% had other non-European backgrounds. Twelve percent of survey respondents reported that their parents earned less than \$26,000 per year while the majority, 57%, said that their parents' incomes were between \$26,000 and \$99,000. Fourteen percent had parents with incomes of \$100,000 or more while 17% did not know their parents' income. The average high school (Ontario Academic Credit (OAC)) mark of graduates was 77%.

Learning Outcomes

It is reasonable to assume that different subjects are mastered by graduates of varying faculties, and that graduating from certain faculties, such as the Schulich School of Business, might result in a higher probability of obtaining a job (this was true at the time of graduation but by the time of the second survey graduates of most faculties had jobs if they were not still students). As seen from Table 1, in total, 85% of graduates were from the Faculty of Arts, 4% from SSB, 5% from Fine Arts, 6% from Science.

The mean grade point average (GPA) of graduates was 5.98.

Considerable research has supported the validity of self-assessments of skills and knowledge (Baird, 1976; Berdie, 1971; Dumont & Troelstrup, 1980; Evers et al, 1993; McMorris & Ambrosino, 1973; Pike, 1994, 1995a, 1995b; Pohlmann & Beggs, 1974). As a result, in the first survey, students had been asked to assess their analytical, communication, personal, organizing, comparative, entrepreneurial, arithmetic, and computer skills. The 38 questions used to measure all these skills, with the exception of entrepreneurial skills, had the following introduction: “Please indicate how much difficulty you would have with each of the following.” This initial statement was followed by a particular skill, such as ‘explaining what ‘square root’ means’. Response options ranged from 1 to 5 where 1 meant a great deal of difficulty and 5 no difficulty at all (see Grayson, 1999b, for more details). This procedure did not require respondents to recall how much they thought university had contributed to their skill development – a process fraught with recall problems. Instead, it provided an assessment of students' skills made at the point of graduation from York.

Entrepreneurial skills were measured by asking respondents to, “Please indicate whether or not you have done the following since you were 13 years old.” Following this introduction, a number of behaviours suggesting entrepreneurialism were listed. Response options ranged from 1 meaning not at all to 5 indicating often.

Information for skills in Table 1 shows scores of 4.20 for analytic skills, 4.25 for communication, 4.28 for personal skills, 3.67 for organizing skills, 3.54 for comparative skills, 2.78 for entrepreneurial skills, 4.54 for math skills, and 3.59 for computer skills. Other research has shown considerable difference among faculties in the development of these skills (Grayson, 1999b).

Other information related to learning outcomes in Table 1 are questions on education after graduation from York: whether or not students took a certificate program in a community college (12%); whether they pursued further undergraduate education (9%); if they went to graduate school (5%); took a professional program (5%); or took some other form of education (24%). It is worth repeating that despite their pursuing additional educational opportunities, those dealt with in this study were employed at the time of the second survey.

Job Outcomes

There are five job outcomes of interest in the current study: job satisfaction, the relation of jobs to education, income, job security, and having a healthy job.

Job satisfaction was measured by a question in which respondents were asked: “*Overall, how satisfied are you with your main job? Would you say you are very satisfied, somewhat satisfied, neither satisfied nor dissatisfied, somewhat dissatisfied, or very dissatisfied?*” For analysis responses were reverse coded with 1 meaning very dissatisfied

and 5 very satisfied. The mean satisfaction with job score was 3.93.

The relationship between jobs and education was measured by asking: “*How closely is your job related to your undergraduate education at York? Is it closely related, somewhat related, or not related at all?*” Reverse coding for analysis meant that 1 meant not related at all and 3 closely related. The average score for this variable was 1.84.

A measure of income was obtained by the question: “*Could you please tell me if your monthly income from your main job, before taxes, is below \$2,000 or above \$2,000.*” Respondents were then asked, using categories with \$500 increments, to pinpoint their incomes more precisely. On average, graduates reported incomes of apparently \$1,800.

Job security was assessed by respondents’ answers to the question: “*How likely is it that you will be laid off from your main job in the next 12 months? Would you say it is very unlikely, somewhat unlikely, somewhat likely, or very likely?*” In analyses 1 meant very unlikely and 4 very likely. The average score for job security was 1.69.

The extent to which respondents had healthy jobs was determined by four questions with the following format that were consistent with Karasek's and Theorell's demand-control model .

1. *First, your job requires a high level of skill. Do you agree or disagree?*
2. *There is a lot of freedom to decide how to do your work. Do you agree or disagree?*
3. *The people at work take a personal interest in you. Do you agree or disagree?*
4. *Your supervisor is very concerned about the welfare of those under him/her? Do you agree or disagree?*

Respondents were further asked if they agreed/disagreed somewhat or strongly and overall response options ranged from 1 meaning strongly disagree to 4 indicating strongly agree. An index was constructed by summing scores and dividing by 4. The mean healthy job score was 3.25. As the highest possible score was 4.00, this figure indicates that in absolute terms most graduates had fairly healthy jobs.

Connections

Information on ‘job connections’ that may have assisted graduates in getting jobs is presented in Table 1. The question used in determining connections was: “Which of the following best describes how you got your main job?” If we take the options ‘knew someone there’ (19%), ‘help from family’ (4%), ‘help from friends’ (7%), ‘help from former employer’ (2%), ‘was a part-time job’ (12%) as suggestive of some form of ‘connections’, we see that 44% of respondents were helped out by people they knew.

Those who obtained their job some 'other way' (34%) or by 'responding to an ad' (21%) can be viewed as not having connections as portrayed in the model.

Analysis

In order to assess the impact of pre-university characteristics, learning outcomes (including additional education), and connections on job outcomes, a series of ordinary least squares regressions were carried out. In each, variables dealing with pre-university characteristics, learning outcomes, additional learning, and connections were entered as blocks. The results of this procedure are found in Table 2 (see appendices). After listwise deletion the total number of cases available for the regressions ranged from 657 to 747.

In the table, the job outcomes are listed across the top. Variable blocks are displayed on the left side of the page. For each variable, regression coefficients (b), standardized regression coefficients (beta), and the significance of 't' (sig.) is reported. Cumulative explained variance is found at the end of each variable block. Cumulative model significance is also reported. As a result, the model significance reported for the pre-university characteristics block (.030) reflects the inclusion in the model of only pre-university characteristics. The significance level found at the end of the learning outcomes block (.001) pertains to the inclusion of both the pre-university characteristics and learning outcomes variables. The same logic applies to the interpretation of significance levels after the remaining blocks of variables. The b, beta, and significance reported in the table are based on the final regression which includes all variable blocks.

In the analysis, the intent to examine the extent to which the same variables, such as age, explain different job outcomes, such as satisfaction. As a result, primary emphasis will be placed on betas. In some instances, dummy variables are used in analysis, e.g., male. In such cases, comparisons are made with a specified reference category, e.g., female. Because of the potential for information overload, only statistically significant results are presented in the table.

Pre-university Characteristics

The first observation that can be made from table data is that year of birth, being Black, of Chinese origin, and not knowing parental income are of no consequence for any of the job outcomes under discussion. Starting with the first statistically significant (dummy) variable, 'male', table data show with all else constant that males report slightly more income than females (beta = .094); however, this variable has no statistically significant impact on any of the other four job outcomes. In addition, graduates of South Asian origin have slightly higher incomes than those of European origin (the reference category) (beta = .079). In addition, graduates from families earning \$26,000 to \$99,999 and \$100,000 and over report higher incomes than those from families earning less than

\$26,000 (the reference category) (respective betas = .140 and .160). The only outcome on which OAC average has a statistically significant impact is the relation of jobs to education – the higher the OAC average, the greater the connection (beta = .099).

Although no individual variables were statistically significant, taken collectively, pre-university characteristics explain 2.7% of the cumulative variance in job satisfaction, 8.3% in the relation of jobs to education, and 5.1% of the variance in income. The corresponding figures for job security and having a healthy job are 1.8% and 1.7%; however, the effect of pre-university characteristics on these outcomes is not statistically significant.

Overall, figures such as these indicate males, those of South Asian origin, and graduates from *relatively* high income families have slightly higher pay cheques than others, even after all the other variables in the equation, such as GPA, skills, and so on, are controlled. In essence, ascriptive (things people cannot change), rather than achievement variables affect the incomes of graduates. Similarly, students with high OAC grades are more likely than others to say that their job is related to their education. Although understandable, this finding is difficult to explain. Pre-university characteristics have very little impact on job satisfaction, job security, and having a healthy job.

Learning Outcomes

Recall that being a graduate of a particular faculty is a proxy for having been exposed to a particular curriculum. Having noted this caveat, it appears that SSB graduates are more likely than Arts students (the reference category) to find a relationship between their jobs and their education (beta = .136). This is not surprising as the objective of SSB is to prepare students for work. SSB graduates also have higher incomes than Arts' graduates (beta = .142). It is to be noted, however, that SSB graduates are no more likely than their Arts counterparts to be satisfied with their jobs, to be in secure jobs, or to have a healthy job.

Fine Arts graduates are also more likely than Arts graduates to believe that their job is related to their education (beta = .136); however, their incomes are lower than those of graduates of the Faculty of Arts (beta = -.117). Graduates of Fine Arts programs are no more likely than Arts graduates to be satisfied with their jobs, to believe that they will be laid off, or to have a healthy job.

Like SSB and Fine Arts graduates, those with Science degrees are more likely to report a relationship between their jobs and education (beta = .125); however, they are no different than Arts students when it comes to the other job outcomes.

Overall, these figures on the faculty from which students graduate indicate that SSB, Fine Arts, and Science graduates are more likely than those with Arts degrees to see a relationship between their jobs and education, and SSB graduates have higher incomes than Arts graduates. Faculty of graduation, however, has no consequence for job satisfaction, job security, or having a healthy job.

In addition to graduating from specific programs, it is important to examine the effect of academic standing on job outcomes. Table data indicate that students with high GPA are more likely than others to report a connection between their jobs and education (beta = .147) and that their jobs are secure (beta = .166). This finding may indicate that students with high GPAs are selected by employers for jobs that might make use of their subject matter expertise and that such jobs also promise more job security than others.

Among learning outcomes, students' analytical skills scores, communication skills scores, and personal skills scores have no statistically significant effect on the job outcomes under discussion. Organizing skills have an impact on the greatest number of job outcomes. Students with good organizing skills are more likely than others to be satisfied with their jobs (beta = .162), to believe that their jobs are related to their education (beta = .132), to have higher incomes (beta = .115), and to have healthier jobs (beta = .124) than other graduates.

Table data also show that students with high comparative skills are less satisfied with their jobs than students with low comparative skills (beta = -.104) while students are more likely to see less relationship between their jobs and education if they have relatively high comparative skills (beta = -.093).

Students with high entrepreneurial skills have greater job security than those with less developed entrepreneurial skills (beta = .101) and income varies directly with arithmetic skills (beta = .092) and computer skills (beta = .113).

Overall, the combination of pre-university and learning outcome variable blocks explain 6.7% of the variance in job satisfaction, 19.2% in the relation of jobs to education, 13.8% of income, 5.5% of variance in job security, and 6.5% of variance in having a healthy job. With the exception of job security, all of the regressions are statistically significant. If we subtract from these variances those for pre-university characteristics, we see that learning outcomes explain 4% of the variance in job satisfaction (6.7% - 2.7%), 10.9% of the variance in the relation of jobs to education, 8.7% of the variance in income, 3.7% of the variance in job security, and 4.8% of the variance in the health of jobs.

Additional Learning

Among additional learning variables, having taken a certificate program, a graduate program, or an 'other' program, have no impact on job outcomes. By comparison, graduates who took additional professional programs were more likely than others to see a relationship between their jobs and education (beta = .094), to earn slightly higher incomes (beta = .084), to be more secure in their jobs (.074), and to have a healthy job (beta = .097).

With the addition of the additional learning variable block the total variance explained by this block as well as pre-university characteristics and learning outcomes increases to 8.0% for job satisfaction, 21.3% for the relationship between jobs and education, 15.0% for income, 7.1% for job security, and 7.6% for having a healthy job. The increase in variance accounted for by the additional learning block is 1.3% for job satisfaction, 2.1% for the relation between jobs and education, 1.2% for income, 2.1% for job security, and 1.1% for having a healthy job. In essence, knowing about additional learning only slightly increases overall variance for all job outcomes.

Connections

In the examination of whether or not having connections contributes to positive job outcomes, comparisons are made between getting a job through an ad (which suggests no connections), and obtaining a job through means such as knowing someone who worked there and having help from family. As seen from Table 2, getting help from friends, help from a former employer, and having worked in the current job part-time had no consequences for any job outcome. By comparison, those who got jobs because they knew someone who worked there or because of help from friends were *less likely* than graduates who obtained their job through an ad to find a connection between their job and education (respective betas of -.128 and -.108). These findings may indicate that people who accept help from family and friends do so as a last resort (because they cannot find better jobs in other ways). Graduates who obtained employment through 'other' means are also more likely than the reference group to be satisfied with their job (beta = .188). Also, graduates who obtained their jobs through other means are more likely than other graduates to have healthy jobs (beta = .098).

Overall, pre-university characteristics, learning outcomes, additional education, and connections explain 11.0% of the variance in job satisfaction (sig. = .000), 25.1% of variance in the relationship between jobs and education (sig. = .000), 16.2% of the variance in income (sig. = .000), 7.5% of the variance in job security (sig. = .007), and 9.8% of the variance in job health (sig. = .001). The increase in variance explained with the inclusion of the connections block is 3.0% for job satisfaction, 3.8% for relation between jobs and education, 1.2% for income, 0.4% for job security, and 2.2% for having a healthy job.

Conclusions

The objective of this study was to examine the extent to which students' backgrounds (pre-university characteristics), what students learned in university (learning outcomes), the education they pursued after they completed their undergraduate degrees, and their connections were related to job satisfaction, the relationship between jobs and education, incomes, job security, and the probability of having a healthy jobs. There are several conclusions that derive from the data.

1. The effect of pre-university characteristics, learning outcomes, additional learning, and connections on job outcomes varies depending upon the job outcome under consideration. For example, the factors that help explain relatively high incomes are not necessarily the same as those that explain a connection between jobs and education. Overall, pre-university characteristics have negligible consequences for all job outcomes with the exception of income. One or more learning outcomes has implications for all job outcomes. With the exception of having taken a professional degree, additional learning is of relatively little consequence for job outcomes. Finally, having obtained a job through connections has little positive impact on job outcomes.
2. With the exception of income, the total amount of variance explained by pre-entry characteristics, learning outcomes, additional learning, and connections is low. In essence, most of the variance in job outcomes must be explained by factors other than those included in this study.
3. Of all of the blocks of variables included in the study, the greatest amount of variance in job outcomes is explained by learning outcomes. In essence, university experiences and curricula have an impact on job outcomes.

Although different factors effect different job outcomes, the model utilized in this study serves as an effective organizing principle for the examination of various aspects of graduates' jobs two years after degree completion. Within this framework, learning outcomes are particularly important. This said, helpful though the model is, there is much in job outcomes of recent graduates that is left unexplained.

Appendices and References

Table 1: Students' Characteristics

Pre-university characteristics	% or mean
Age	27
Female	70%
Male	30%
European origin	73%
Black	5%
South Asian origin	5%
Chinese origin	6%
Other non-European origin	11%
Family income less than \$26,000	12%
Family income \$26,000 to \$99,999	57%
Family income \$100,000 or more	14%
Don't know family income	17%
OAC average	77%
Learning Outcomes	% or mean
Analytic skills score	4.20
Communication skills score	4.25
Personal skills score	4.28
Organizational skills score	3.67
Comparative skills score	3.54
Entrepreneurial skills score	2.78
Arithmetic skills score	4.54
Computer skills score	3.59
Arts graduate	85%
SSB graduate	4%
Fine Arts graduate	5%
Science graduate	6%
Cumulative GPA	5.82

Additional Learning	% or mean
Took certificate program	12%
Took undergraduate program	9%
Took graduate program	5%
Took professional program	5%
Took 'other' program	24%
Job Outcomes	% or mean
Job satisfaction	3.93
Relation job to education	1.84
Income (average monthly)	\$1,800
Job security	1.69
Healthy job score	3.24
Connections	% or mean
Got job through ad	21%
Knew someone working there	19%
Help from family	4%
Help from friends	7%
Help from former employer	2%
Worked there part-time	12%
Other	34%

Note: With listwise deletion, total cases for table = 841.

Table 2: Regression Models

	Job satisfaction			Relation to education			Income			Job security			Healthy job		
	b	beta	sig.	b	beta	sig.	b	beta	sig.	b	beta	sig.	b	beta	sig.
Pre-university characteristics															
Year of birth															
Female (reference category)															
Male							.381	.094	.022						
European origin (reference category)															
Black															
South Asian origin							.663	.079	.039						
Chinese origin															
Other non-European origin															
Family income less than \$26,000 (reference category)															
Family income \$26,000 to \$99,999							.531	.140	.025						
Family income \$100,000 or more							.847	.160	.004						
Don't know family income															
OAC average (n %)				.013	.099	.028									
Explained variance (cumulative)				2.7%			8.3%			5.1%			1.8%		1.7%
Model significance				.030			.000			.000			.217		.366
Learning Outcomes															
Arts graduate (reference category)															
SSB graduate				.505	.136	.000	1.18	.142	.001						
Fine Arts graduate				.448	.136	.000	-.904	-.117	.002						
Science graduate				.439	.125	.000									
Cumulative GPA				.113	.147	.001				.171	.166	.001			
Analytic skills score															
Communication skills score															
Personal skills score															
Organizing skills score	.240	.162	.000	.140	.132	.002	.280	.115	.017				.091	.124	.014
Comparative skills score	-.128	-.104	.001	-.081	-.093	.021									
Entrepreneurial skills score										.132	.101	.001			
Arithmetic skills score							.276	.092	.023						
Computer skills score							.231	.113	.007						
Explained variance (cumulative)				6.7%			19.2%			13.8%			5.5%		6.5%
Model significance				.001			.000			.000			.099		.004

	Job satisfactor			Relation to education			Income			Job security			Healthy job		
	b	beta	sig.	b	beta	sig.	b	beta	sig.	b	beta	sig.	b	beta	sig.
Additional Learning															
Took certificate program															
Took undergraduate program															
Took graduate program															
Took professional program				.376	.094	.006	.794	.084	.028	.403	.074	.048	.264	.097	.015
Took 'other' program															
Explained variance (cumulative)			8.0%			21.3%			15.0%			7.1%			7.6%
Model significance			.000			.000			.000			.022			.003
Connections															
Got job through ad (reference category)															
Knew someone working there				-.273	-.128	.002									
Help from family				-.415	-.108	.003									
Help from friends															
Help from former employer															
Worked there part-time															
Other	.457	.188	.000										.118	.098	.049
Explained variance (cumulative)			11.0%			25.1%			16.2%			7.5%			9.8%
Model significance			.000			.000			.000			.007			.001

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