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Education and employment in two Chilean undergraduate programs

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Abstract

Purpose – The purpose of this paper is to determine which of the two variables would be a more reliable proxy for quality of university training: graduates' satisfaction with their degree program, or institutional prestige.

Design/methodology/approach – Graduates of professional psychology and teaching programs from three Chilean universities responded to a questionnaire asking their perception of different aspects of their degree program and experiences in their first employment. The three universities differ significantly in the proportion of applicants admitted, and in their prestige.

Findings – Salary levels are highly related to profession, but unrelated to graduates' ratings of quality of curriculum or teaching methods. Overall satisfaction with the university experience is not linked to job satisfaction. Job satisfaction, on the other hand, is highly influenced by salary and secondarily by instructional practices and perceived work relevance of the degree program.

Research limitations/implications – This study is based on data from 3 of Chile's 60 universities, and graduates of two programs. Most employment in the two professions is regulated by labor agreements. Generalizability of results is limited. Graduates may not have been employed enough to demonstrate their capacities.

Practical implications – The findings offer more evidence that prestige ratings are an unreliable indicator of the quality of formation offered by universities. If the government seeks to reduce income inequality, public subsidies of higher education should be based on program quality rather than on institutional prestige.

Originality/value – The findings are directly relevant to the current debate in Chile about what might and what might not help to reduce severe economic inequality.

Keywords Employment, Student satisfaction, Chile, Inequality, Psychology program, Teaching program

Paper type Research paper

1. Introduction

Recent, massive university student protests in Chile were motivated in part by doubts about the quality of teaching and learning (Espinoza and González, 2013). The democratic governments that came into power after 1990 had promised that expansion of education would not only increase economic growth, but also turn Chile into a more egalitarian society. The economy did grow and enrollments in universities have more than doubled in 20 years. By 2015 the gross enrollment ratio for post-secondary education in Chile was over 50 percent (Espinoza and González, 2015).

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However, despite reduction of inequality in access to education, Chile continues to rank first among 34 OECD countries (ahead of Mexico and Turkey) in income inequality. Even though fewer families are living in poverty, wide disparities in household income persist (OECD, 2016).

Factors that support inequality are built into the educational system of Chile. There are three types of secondary schools (that prepare for university): municipal schools controlled by municipal governments; voucher schools chartered by the government but controlled by private (religious and secular) groups; and private schools. The first two receive a basic subsidy from the central government, both can charge a tuition fee. Municipalities in Chile vary significantly on average income of households. The wealthier municipalities provide extra funds for their schools. A minority of voucher schools caters to students from lower SES families; others charge tuitions and solicit private donations, and attract students from middle SES families. About 10 percent of students are enrolled in fee-charging privately controlled schools that receive no subsidies from the government. During the past 20 years voucher schools have increased their share of secondary student enrollment from 36 to 54 percent (Portales and Vázquez, 2014). With the expansion of access, Chile had by the early 2000s achieved gender parity for school attendance through secondary school (Avalos, 2003).

There are significant differences between the three types of schools in terms of the characteristics of their students. Average scores on the national 4th and 8th grade achievement test differ significantly, with municipal schools obtaining the lowest average score and private schools the highest (Valenzuela *et al.*, 2008; Senado, 2012), but the differences shrink taking into account the household income of their students (McEwan and Carnoy, 2000; Hsieh and Urquiola, 2006; Elacqua *et al.*, 2011). Mothers have more influence over which school children attend; previous studies have shown that the more education parents have, the more likely it is that the child will attend a voucher or private school (Gauri, 1999; Portales and Vázquez, 2014).

Most of the “first-generation” students (whose parents had no university education) are enrolled in the new private universities (Espinoza *et al.*, 2009) which set lower qualifications for admission but charge high tuitions. These universities receive lower quality rankings than do the universities established before 1981 (América Economía Intelligence, 2016). Their graduates also receive lower salaries than graduates from the older, “traditional” universities (Cummings, 2015). Students scoring high on the national admission test are given free tuition at the older universities[1]. Employers award higher salaries to graduates from these institutions (Chacón, 2015; Esquivel-Larrondo, 2011; Page, 2010), which reinforces the belief that they offer higher quality education (Arum and Roska, 2011; Espinoza *et al.*, 2017). Employers often lack information about specific academic programs, employment, with the consequence that hiring decisions are based on institutional prestige (Bordón and Braga, 2013).

This paper explores the associations between university graduates’ perceptions of their degree program and measures of their employability (Harvey, 2001). The question asked is: Is the employability of university graduates associated principally with the selectivity or prestige of their university, or with the perceived quality of their degree program?

2. Research on student ratings of teaching quality, student satisfaction, university ratings and employability

2.1 Teaching quality

Quality can be defined in either subjective or objective terms. Most educators have preferred to understand quality as relative to a given actor’s position, e.g., “beauty is in the eye of the beholder” (Harvey and Green, 1993; Brockerhoff *et al.*, 2015). In universities teaching commonly is assessed by students.

This use of student ratings to evaluate university teaching began at least 50 years ago (McKeachie and Solomon, 1958). Students were asked to report on their instructor’s frequency of behaviors that were presumed to be associated with learning. The objective was to provide university professors with information that would help them improve their instructional

practices, increasing student learning outcomes. Resistance to student ratings by university professors grew rapidly when ratings were used by university administrators to justify decisions about re-hiring and salary. Arguments piled up on both sides, most unsupported by good research. One study measured the mathematics aptitude and grade expectations of students in ten sections of a 6-week introductory mathematics course. At the end of the course a positive correlation was found between class average ratings of teachers and average class grades (Orpen, 1980). A meta-analysis of 41 studies of similar design reported an average correlation of 0.43 between rating of the instructor and student achievement 0.43 (Cohen, 1980). Use of student ratings by university officials has been associated with a steady increase in average grades; teachers have learned that (independent of their learning) students who anticipate higher grades give higher ratings (Eiszler, 2002). Further meta-analyses have noted the methodological limitations of earlier research, especially small sample size, lack of value-added scores and non-representative assignment of students to groups.

Although studies have found significant correlations between measures of student ratings of teaching and achievement (test scores), there is little evidence of a relationship between ratings of teachers and student learning (improvements in achievement over time) (Spooren *et al.*, 2013). The most recent meta-analysis concludes that:

[...] individual differences in knowledge and intelligence are likely to influence how much students learn in the same course taught by the same professor. Similarly, individual differences in students' prior interest in a course are likely to influence how engaged they are, how hard they work and how much they learn. (Uttl *et al.*, 2017)

2.2 Student satisfaction

The initial usefulness of student evaluations of teachers encouraged use of other kinds of feedback. The College Student Satisfaction Questionnaire was developed to measure student satisfaction with their life (at a given moment in time) in the university (Betz *et al.*, 1971). Satisfaction was conceptualized as a short-term emotion experienced in response to conditions that fulfilled prior expectations. Fulfillment of expectations was a function of the student's level of engagement or integration in university academic and social life (Tinto, 1975; Billups, 2008). Factor analysis of more than 100 items yielded five categories of conditions: university environment and conditions; benefits and costs of being a student; quality of teaching; social life; and social belonging.

The model (and variants) was adopted widely by university administrators seeking ways to increase applications for enrollment and to keep students enrolled until graduation. College applications increased after universities published reports of high levels of student satisfaction (Alter and Reback, 2014).

An alternative approach to the measurement of satisfaction defined the university as a service organization and students as consumers. Students would remain in the university if they were satisfied with the services provided. This approach has generated instruments that assess the institution's reliability, student confidence in the providers, physical and communication facilities, responsiveness and personal attention (Parasuraman *et al.*, 1988). Instruments designed for commercial enterprises were re-designed to match specific conditions in universities and applied in many countries (e.g. Chile – de la Fuente *et al.*, 2010; Italy – Mariani *et al.*, 2015; New Zealand – Kao, 2007; Pakistan – Ijaz *et al.*, 2011). Given a temporal definition of satisfaction as dependent on expectations, studies have been limited to demonstrating the content and construct validity of measures of satisfaction but have not demonstrated their relationship with outcomes such as employment. An important issue (for assessing program quality) is whether student satisfaction is specific to the degree program pursued in the university or generalizes to the whole institution. For example, in Norway, student intention to continue in the university was related to satisfaction with service

quality and facilities, and the image of the university college. Student satisfaction was highly related to university loyalty (not dropping out), but not consistent across programs (Helgesen and Nettet, 2007). Equivalent research has not yet been done in Chile.

2.3 University rankings

A third type of indicators of university quality is comparative rankings of institutions. There is an abundance of ranking systems, available online and in print media (Institute for Higher Education Policy, 2007; Altbach, 2010; Rauhvargers, 2013). Typically, they include judgments based on opinions of colleagues (administrators and professors), volume and citation of (research) publications, faculty degrees and awards, students' achievement levels, accomplishments of graduates, library resources and expenditures on students (Dill and Soo, 2005; Tofallis, 2012).

The rankings, produced by combining many different indicators, are presented as valid measures of a university's overall "excellence" or "quality." The rankings have an important impact on how universities are perceived, that is, on their image and reputation (Rauhvargers, 2013). Quality, however, can be defined in many ways (Schindler *et al.*, 2015), and the reliability of the various rating scales is questionable (Dill, 2009). More than 50 specific indicators have been identified to date, roughly categorized as inputs (administrative, student support and instructional) and outputs (student performance). The four major groups of "beholders" of university quality – providers (funders, administrators and teachers); users of the service (e.g. students); users of the outputs (e.g. employers); and the graduates themselves – use different sets of indicators in their assessment of universities.

No direct measures of learning are included. Sometimes a ranking system includes examination scores; these indicate the graduate's current knowledge and skills, but not how much was learned at the university (Ballard, 2013). Most systems do not include measures based on what happens in classrooms (Tang and Wu, 2010). Ratings ignore differences in culture and methodology of the various disciplines (Goglio, 2016). To date there is no accepted measure of quality defined as amount of learning (Wächter *et al.*, 2015). Only a few ranking systems (e.g. in the UK) include measures of student satisfaction (Lenton, 2015). Where available, data on satisfaction are used in publicity promoting individual institutions. Changes in a university's reputation (e.g. increases in student satisfaction) are followed by changes in number of applicants (Alter and Reback, 2014).

2.4 Employability of graduates

As the perceived value of the university's services increases so too does its prestige, which in turn attracts more students (Marope *et al.*, 2013). Besides satisfaction, employability contributes to the perceived value of a degree from a particular university (Teixeira *et al.*, 2015) and consequently to its reputation or prestige.

Employability has been defined as the ability to gain and keep a job. It is "a form of work-specific (pro)active adaptability that consists of three dimensions – career identity, personal adaptability and social and human capital" (Fugate *et al.*, 2004, p. 14). Employability depends not just on what is acquired in higher education but also previous life experiences (Harvey, 2001; Finch *et al.*, 2013). It is observed in individual outcomes such as the shortness of time after graduation to secure employment, the coherence between the job and university training, income or earnings from the employment and satisfaction with the job (Harvey, 2001; Campostrini and Gerzeli, 2007; Espinoza *et al.*, 2017).

Some determinants of employability precede university enrollment. For example, a study in England showed that employment status and earnings of graduates were associated with gender, socio-economic status, subject or discipline studied and type of secondary school attended (Smith *et al.*, 2000). The employability of graduates from lower SES strata is higher if their university program includes work experience, and they engaged in extra-curricular

activities (Blasko, 2002). Academic subject knowledge is important for employability in some but not all occupations; more generally required are skills and competencies such as ability to communicate and to work with others (Harvey and Green, 1993; Murnane and Levy, 1996).

The university ranking systems include data on selectivity of admissions. Over time selectivity raises the prestige of an institution, as the public assumes that the quality of students raises the quality of programs (Murdoch, 2002). Ironically, as an institution's prestige increases, the number of its lower-income students may decline. In some countries (i.e. USA, Australia, England and Russia), qualified low-income students, and especially those from non-urban areas, are more likely to apply to and attend less well-known rather than prestigious universities (Castro *et al.*, 2016; Hoxby and Avery, 2012; Jerrim *et al.*, 2015).

Employers in large firms rely principally on the reputation (or ranking) of the institution where the candidate studied. This produces what is known as the "sheepskin" effect (Kjelland, 2008). In the absence of substantive information about the skills of two candidates from different universities, employers are more likely to use university prestige as foretelling higher productivity. They assign higher wages to the candidate from the university believed to be of higher quality (Humburg *et al.*, 2013). To date there is no generally accepted method for estimating the quality or human capital formation of the variety of programs offered in universities (Wächter *et al.*, 2015). Nor has it been possible to develop an instrument measuring employability skills that successfully predicts employment (Rodgers, 2012).

Universities also vary in their linkages to employers, as a result of social relationships or institutional strategy. A comparison of graduates in three European countries found that students whose parents had university education were more likely to enroll in a field of study of longer duration, in institutions perceived to be of higher quality. These institutions in turn had stronger ties with the labor market (Triventi, 2013).

2.5 Hypotheses based on the review of research

- H1. The selectivity of the university a student enters varies directly with his/her family SES and that of the secondary school attended.
- H2. Graduates' satisfaction with their degree program varies directly with the selectivity of the university attended.
- H3. Graduates' satisfaction varies directly with their employability (Figure 1).

3. Methodology

This study uses quantitative analysis of questionnaire responses to assess the relationship between participants' characteristics, their satisfaction with their university degree program and their employability experiences. Cross-tabular analysis and tests of differences of means are used to calculate the statistical significance of the relationships.

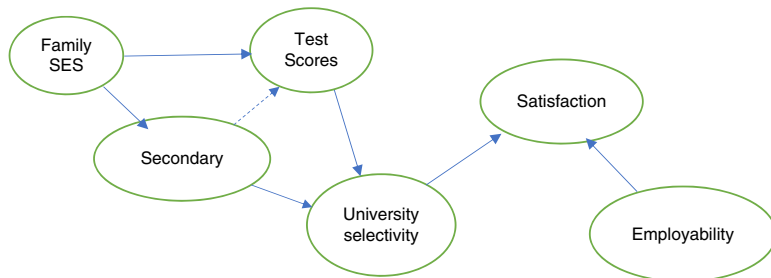


Figure 1.
Hypothesized
relationships
between variables

3.1 Sample of participants

The universe of subjects for this study was all students graduating in the years 2012, 2013 and 2014 from the degree programs in psychology, and basic education teaching, offered by three specific universities located in Santiago, Chile. The two degree programs, teaching and psychology, rank 4th and 7th, respectively, in size of total university enrollment in Chile (CNED, 2015). Of the ten most popular degree programs in Chile, teaching has the lowest net rate of economic return (about -0.1 percent) and psychology ranks 5th at 0.2 percent (González-Velosa *et al.*, 2015). Each program awards a professional degree for which all students take the same set of courses. The teaching program can be completed in four years but may take four and one-half or five years. Psychology programs usually are completed in five years. About one-half of all graduates, chosen randomly, were contacted over the internet during the months of November and December 2015. Participants filled out the study questionnaire during visits to their university. The final results of the sampling process are described in Table I.

3.2 Variables

Selectivity of the university. Selectivity was defined taking into account both the criteria for admission and proportion of applicants admitted. The criteria include scores on the national University Selection Test (PSU), and secondary school grade point averages (GPA). The most selective university (High) admits applicants with PSU scores above 600. Persons who score below that level but at least at 475 are admitted if their secondary school GPA is 5.25 or better (with 7 being the top grade). The mid-low selective university admits applicants who score 475 or better on the PSU. The low selectivity university requires students to take an admission examination but all secondary school graduates are accepted.

The selectivity of the universities corresponds to their comparative ranks as calculated by *America Economía*, a Latin American business magazine published since 1986 (<http://rankings.americaeconomia.com/mejores-universidades-chile-2014>). Rankings of 57 universities in Chile are based on students' PSU score and GPA, characteristics of the teaching staff (percent full time, percent with doctorates, research production), accreditation and international connections. The high selectivity university is ranked among the top ten institutions in Chile. It has been in existence for about 100 years. The mid-low university was founded about 30 years ago and is accredited but ranked near the middle of the bottom half of Chilean universities. The low university was founded more recently, is not accredited and is ranked near the bottom of the 57 universities.

Family SES. Mother's education was used as a proxy for family SES. Research indicates that mother's educational attainment is more closely related to student performance than is father's (Chiu and Khoo, 2005).

Secondary school. The type of secondary school attended (municipal, voucher or private) is used as a categorical variable.

University prestige	Program	Total number of graduates	Obtained % of total	Number of cases	Obtained sample %
High	Psychology	162	26.0	70	41.9
	Teaching	75	12.1	29	38.7
Mid-Low	Psychology	136	21.9	53	39.0
	Teaching	96	15.4	39	40.8
Low	Psychology	77	12.4	42	54.6
	Teaching	76	12.2	33	43.3
	Total	622	100	266	42.8

Table I.
Obtained sample of cases by university and program

Time to find a job. The time spent looking for employment is presented in Table II. More than a third of the teaching graduates were working before graduation compared to 27 percent of the psychology graduates. Ten of the graduates were either not looking for employment or still taking courses.

Coherence of training and job. The participants were asked to rate on a six-point scale ranging from high to none the degree of coherence or connection between their degree program and their job. About 86 percent of each group said that their job was coherent or highly coherent. About 12 percent of the teaching graduates reported no coherence. Graduates of the two programs also did not differ in their satisfaction with their current work situation; slightly more than half said they were “moderately” satisfied or not satisfied, only 7 percent reported their situation as very satisfactory.

Earnings from job. Several factors make it difficult to compare salaries or earnings of the two groups of graduates. Teacher hourly rates are much less variable than those in other professions. While 80 percent of both groups are employees, 18 percent of the teachers and 10 percent of the psychologists are in management positions. A total of 10 percent of the psychology graduates are self-employed; their hours of work and incomes vary widely. Psychology graduates in managerial positions (directors) in the public sector earn more than those in education (principals). Table III compares graduates by monthly earnings. The middle earnings category – \$750 to \$1,500 – includes the 2014 income per capita (GDP/capita) for Chile, approximately \$1,185 per month (United Nations Statistical Division, 2015). Psychologists’ earnings were on average higher than those in teaching, but not for the group of teachers that graduated in 2014 and which had completed the provisional period.

Satisfaction with degree program. Participants indicated their degree of agreement with 26 positively worded statements describing aspects of the degree program, using a Likert Scale format (strongly disagree, disagree, agree, strongly agree)[2]. The statements (see Table IV) are similar to those used in studies in other countries, adapted to the Chilean context (Kao, 2007; Valenzuela and Requena, 2006; Stephens, 2014).

A principal components factor analysis was carried out to identify dimensions of satisfaction. Missing responses were given a mean value. Adequacy of the data for factor analysis was assessed applying the Kaiser Meyer Olkin test. This yielded a coefficient of 0.919 which indicated sufficiently high correlations among the items. Bartlett’s test of sphericity showed that factor analysis was appropriate ($p < 0.001$). The four factors extracted account

Table II.
Time to employment
by degree program

Time to employment	Teaching (%)	Psychology (%)	Total	
Before graduation	34.7	27.2	77	30.1%
Less than 2 months	33.7	28.5	78	30.5%
2–6 months	21.4	27.2	64	25.0%
6 months to a year	7.1	12.0	26	10.2%
More than one year	0	5.1	8	3.1%
Not yet employed	3.1	0	3	1.1%
Total	98	158	256	100.0%

Table III.
Estimated monthly
earnings of graduates
by profession

Program	< \$750		\$750–1,500		> \$1,500		Total <i>n</i>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Psychology	31	19.7	93	59.2	33	21.0	157
Teaching	36	38.3	55	58.5	3	3.2	94
Total	67	26.7	148	59.0	36	14.3	251

Questionnaire item	I	II	III	IV
2. The training I received in my degree program was of high quality		0.731		
3. If I had the opportunity to take my program again I would choose the institution where I studied		0.802		
4. As a graduate of the program and the institution where I studied I have a professional identity	0.783			
5. The program gave me a training that permitted me to take one the process of obtaining the academic degree and professional title without problems	0.710			
6. The theoretical training that the degree program gave me was adequate	0.563			
11. The training I received was sufficient to perform satisfactorily in the world of work	0.528			
14. When I compare myself with graduates from other programs I am aware that the reaction of employers was more favorable toward us	0.665			
20. The course contents were appropriate for my training and performance as a professional	0.507			
24. The institution was constantly concerned about improving the quality of the infrastructure		0.702		
24. The program in which I studied always provided the (means) (equipment) for activities (seminars, field trips, etc.) necessary for my training		0.783		
25. The institution and the program had an adequate library and places to study		0.875		
26. The lab and workshop sessions were correctly implemented		0.826		
10. The program and/or institution where I studied had a good policy with respect to the labor force				0.539
13. On graduating from the program, I was hired at a level that met my professional expectations and income requirements			0.577	
15. The study plan included activities that linked students to the work place			0.706	
1. My degree program was very demanding				-0.532
9. When I studied the program they exposed me to the curriculum				-0.623
16. The study plan and course program was fulfilled completely				-0.712
17. The curriculum seemed coherent and flexible to me				-0.741
18. The curriculum proposal clearly identified the minimal knowledge and skills required to graduate				-0.610
19. The learning objectives of the Study Plan were made clear to me				-0.672
23. The teaching styles of the program were motivating and stimulated participation				-0.617
Unique variance explained	44.3%	8.9%	5.7%	4.5%
<i>Variables not included in the factor scores</i>				
7. The practical training that the program gave me was appropriate	0.383	0.043	0.162	-0.326
8. The personal and value training the program gave me was superb	0.495	0.176	-0.098	-0.354
12. The preparation for work that the program gave me matched the requirements of the work place	0.449	-0.047	0.417	-0.257
22. The course activities made it possible for me to combine theory and practice in the work place	0.382	0.024	0.260	-0.407

Table IV.
Questionnaire items
and factor loadings,
pattern matrix

for 63 percent of the cumulative variance in the eigenvalues. As the factors all refer to the same phenomenon, we assume they should not be orthogonal, so Kaiser Oblimin Rotation was used. The results appear in Table IV; for clarity, only factor loadings than 0.500 are included.

The eight statements that have factor loadings in the first column (I) refer to judgments by the graduate of how the program affected him/her. We refer to this factor as the outcome satisfaction scale. The second factor refers to satisfaction with the various facilities or services of the program, it is called infrastructure satisfaction. The third factor includes

items referring to connections between the degree program and the world of work. The factor is labeled linkage satisfaction. The final factor includes items that describe the content and teaching style of the program. It is called curriculum satisfaction. The negative factor loadings are a procedural artifact.

Raw scores were computed including graduates who responded to all the items in the scale. Table V presents the average scores on the four scales in which graduates had responded to all the items included. A few individual items had low response rates; for example, item 14 “When I compare myself with graduates from other programs, I am aware that the reaction of employers was more favorable toward us” was answered by only 227 graduates; others left blank other items. The outcome satisfaction scale score is highest; on average graduates “Agree” with the positive statements. On average graduates also agree with the statements in the curriculum satisfaction variable; they are more likely to disagree with the linkage and facilities items. Table V also presents the reliability (Alpha score) for each of the scales; the outcome and facilities scales reach an acceptable level of reliability.

4. Results

With respect to the first hypothesis, there is no relationship at all between the level of education of a graduate’s mother, and the selectivity of the university attended. There is, however, a relationship between the type of secondary school attended and university selectivity. Graduates who attended municipal secondary schools, and those who attended private schools, were more likely to attend a selective university than those attending a state-subsidized (voucher) private school. This relationship is highly significant ($p < 0.000$).

The second hypothesis stated that satisfaction of graduates would be higher among those who had attended selective universities. Factor scores were computed based on the results shown in Table IV, substituting a mean value for missing responses. The factor scores are standardized to a mean of 0 with a standard deviation of 1. Table VI presents the

Table V.
Raw scores on scales
(with missing data)

Factor scale	Mean	SD	α	n	No. of items
I Outcome satisfaction	3.02	0.72	0.91	207	8
II Facilities satisfaction	2.55	0.75	0.82	252	4
III Linkage satisfaction	2.42	0.70	0.65	247	3
IV Curriculum satisfaction	2.99	0.63	0.61	249	7

Table VI.
Mean factor scores on
satisfaction scales by
selectivity of university
and degree program

University selectivity	Degree program	Outcome satisfaction	Facilities satisfaction	Linkage satisfaction	Curriculum satisfaction	n
High	Teaching	0.26	0.15	0.46	0.11	29
	Psychology	0.56	-0.53	-0.13	-0.29	70
Mid-Low	Teaching	0.01	0.63	0.29	0.38	39
	Psychology	-0.14	-0.02	-0.11	-0.06	53
Low	Teaching	-0.61	0.06	0.20	0.12	42
	Psychology	-0.46	0.17	-0.39	0.03	33
Total	Teaching	-0.12	0.31	0.31	0.22	101
	Psychology	0.07	-0.19	-0.19	-0.13	165
	Total	0.00	0.00	0.00	0.00	266
<i>Statistical significance</i>						
	Selectivity	0.000	0.000	0.409	0.093	
	Degree program	0.122	0.000	0.000	0.005	

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factor scores for each of the scales, arranged by degree program and the selectivity of the university attended. The direction of scores on curriculum satisfaction has been reversed to correspond to actual responses.

There is no significant difference in outcome satisfaction comparing graduates from psychology and from teaching programs. There is, however, a significant difference between graduates of the three universities; the more selective the university, the higher is agreement with positive statements about the outcome of the degree program. This is consistent with our second hypothesis. Note also the significant difference for psychology graduates with respect to satisfaction with the university's facilities; graduates who attended the more selective university were least satisfied. We doubt that this reflects a causal relationship, but it does suggest that the impact of university prestige might transcend negative features of specific programs.

The third hypothesis posited that employability is positively related to satisfaction. The first measure of employability is time to employment. There is no linear relationship between time looking for employment and outcome satisfaction; the graduates most satisfied with their outcomes were those who took between 2 and 6 months. Second, there is no linear relationship between the coherence of what was taught and learned in the degree program and demands of the job. The graduates most satisfied with their program's outcomes were those who saw only a moderate relationship between the program and the job. A third indicator of employability was salary. Again, there is no linear relationship between the two variables. Those who work full time are more satisfied than others ($p = 0.002$) but not with the amount of salary reported or our estimates of their hourly wage rate. Finally, graduates were asked to rate their level of program satisfaction with their current situation. The graduates most, and least, satisfied were those with the lowest outcome satisfaction scores.

The measures of employability relate differently to the other three types of program satisfaction. With respect to time to find a job, only linkage satisfaction has a significant linear relationship; the more the program connected with the world of work, the less time to become employed ($p = 0.021$). Similarly, there is a strong relationship between linkage and the extent to which job responsibilities match what had been taught in the program ($p < 0.000$). Satisfaction with facilities and with curriculum has a curvilinear relationship with the measures of employability implying the influence of another, unidentified factor. Earnings are not related to any of the satisfaction measures.

5. Discussion

The data collected in this small study of three universities provide a complex view of how family background, gender, secondary school preparation and degree program quality influence (at least initial) salaries of psychology, and teaching, graduates. Some of the results are not surprising. Students in psychology and teaching programs had a higher employment rate, six months after graduation, than that of the general labor force. On average, the graduates' incomes were slightly higher than the national income per capita. Psychologists earned more than teachers; independent of occupation, men earned more than women.

One surprise was the absence of an association between mother's education of graduates and the selectivity of the universities included in this study. In general, family SES is highly related to academic performance, and hence to admission into selective universities (Sirin, 2005). Perhaps that relationship is strongest in fields for which university admission is highly competed, such as medicine. In Chile, high scoring students from upper SES families are more likely to select more lucrative professions such as engineering, law or medicine. Programs such as psychology and teaching are less selective and therefore attract fewer candidates from upper SES families. This study does not replicate the finding of research in other countries that candidates from lower SES families avoid selective universities.

The great majority of prior studies on satisfaction has been carried out with students, not graduates and consequently has focused on characteristics of their degree program. This makes sense if the primary concern is how to keep students enrolled once admitted. As this study shows, judgments of graduates two or more years out of the university are influenced by more recent events, specifically characteristics of employment. The influence is not very large, however; variations in the employability measures explain only a small portion (less than 5 percent) of the variance in outcome satisfaction scores. Even allowing for low reliability, the implication is that the graduates experienced their degree programs in diverse ways, independent of the sheepskin or halo effect of the larger university.

The earning levels of male graduates appear to be determined principally by years of employment (and laws which fix different salary ranges for teachers as compared to psychologists). It may be that for these two professions, qualifications (acquired through university training) and the social and cultural capital associated with institutional prestige, have little to do with job performance.

But then why are women's earnings related to their secondary education? Do students learn more in municipal schools than in voucher or private schools? Do women who attended municipal schools have higher levels of motivation than others, motivation that results in superior job performance? Do employers expect that women in general will be less productive and ordinarily pay them less than men, but more than men when they are qualified? Are more qualified women more likely to negotiate higher salaries, or to take on responsibilities that provide higher earnings? We cannot yet answer these questions.

6. Conclusion

This study of the employment of university graduates confirms the results of prior research: graduates of more selective universities are hired more quickly and receive higher compensation for their employment and have higher opinions of their degree program. Both graduates and employers believe that these graduates will be more productive in their organization than would graduates from less selective universities.

On the other hand, the study also provides (some) support for criticisms that university selectivity reinforces existing social and economic inequality. Because family income has an effect on the quality of education a person receives beginning in pre-school, university selection favors those from higher income families. In addition, in Chile students selected into the more prestigious universities are more likely to receive government-financed scholarships. Scores on admission tests are highly correlated with family SES. Employers have relatively little information about actual program quality; selective universities advertise the test scores of the students they have selected.

We actually know relatively little about how university training in Chile impacts performance once a person is employed. Some work has been done in other countries on the construction of value-added measures for higher education (Kim and LaLancette, 2013; Schleicher, 2016), but those built to date rely on repeating tests designed to measure curriculum knowledge obtained before entry to university. We have not found any research that links university selectivity to long-term performance of graduates.

A progressive government in Chile has under consideration a proposal to finance the university education of low-income students who meet basic admission requirements (e.g. high school graduation). As most of the public universities are currently considered to be of high quality, this plan would have two positive effects. First, it would correct the current situation in which low-income students pay more for their studies than do those from upper income families. Essentially, it would eliminate the financial rewards currently associated with high admission test scores. Second, this plan would provide access of low-income students, most of whom have attended lower quality primary and secondary schools, to receive a higher quality university education.

We recognize the limitations of this research. The three universities included cannot represent the full range of universities in Chile, much less in other countries. The sample size while adequate for the analyses carried out is too small to sustain more complex comparisons involving more variables. The questions explored while important tap only a fraction of the issues involved in university selectivity and income equality. Future research should include a sample of graduates who have been in the labor force for longer periods of time. We also submit, however, that these findings are at least as substantial as those which are cited to justify current policies.

Notes

1. The PSU, modeled after the SAT, has an average score of 500 with a standard deviation of 110. Scores correlate moderately (0.44) with first year university grade-point average (Pearson, 2013). Scores are highly correlated with family SES (Esquivel-Larrondo, 2011).
2. One negatively worded statement was eliminated from the analysis.

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Further reading

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