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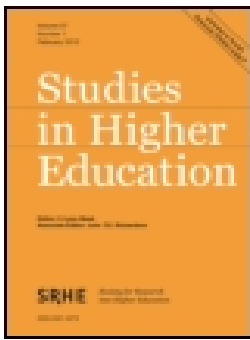
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To cite this article: Oscar Espinoza, Luis Eduardo González, Noel McGinn, Dante Castillo & Luis Sandoval (2017): Factors that affect post-graduation satisfaction of Chilean university students, *Studies in Higher Education*, DOI: [10.1080/03075079.2017.1407306](https://doi.org/10.1080/03075079.2017.1407306)

To link to this article: <https://doi.org/10.1080/03075079.2017.1407306>



Published online: 05 Dec 2017.



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Factors that affect post-graduation satisfaction of Chilean university students

Oscar Espinoza^{a,b,c}, Luis Eduardo González^{d,e}, Noel McGinn^{f,g}, Dante Castillo^{e,h} and Luis Sandoval^{i,j}

^aSchool of Education, University of Pittsburgh, Pittsburgh, PA, USA; ^bCenter of Comparative Educational Policies, Universidad Diego Portales, Santiago, Chile; ^cCenter of Advanced Research, Universidad de Playa Ancha, Santiago, Chile; ^dSchool of Education, Harvard University, Cambridge, MA, USA; ^eInterdisciplinary Program of Educational Research (PIIE), Santiago, Chile; ^fUniversity of Michigan, Ann Arbor, MI, USA; ^gSchool of Education, Harvard University, Swampscott, MA, USA; ^hLicenciado en Sociología, Universidad Arcis, Santiago, Chile; ⁱMagister en Ciencia Política, Pontificia Universidad Católica de Chile, Santiago, Chile; ^jUniversidad Tecnológica Metropolitana, Santiago, Chile

ABSTRACT

Universities' reputations are built in part on graduates' assessments of the quality of education they received. What do these assessments tell us? Are graduates' judgments of quality based on their experiences as students or on their later job satisfaction, that is, on process or on outcomes? The objective of this study was to assess the extent to which Chilean university graduates' satisfaction with their professional training is associated with experiences during the degree program they pursued, employment experiences including salary level, or the prestige level or image of the university they attended. Survey questionnaires were used to collect data from recent graduates of professional programs in Primary-Secondary Teaching and Psychology in three universities that differ in prestige. A linear regression model shows that graduates' satisfaction with their degree program is a joint function of family background, program quality and university image, but not salary once graduated.

KEYWORDS

Satisfaction; Chile; university graduates; university image; program quality; salary

Introduction

In 2006, Chilean secondary students took to the streets to demand better quality of public education (Donoso 2013). Unsatisfied with government efforts to address their complaints, the movement began again in 2011, this time with university students joining in. By May 2011 students had massed in street demonstrations and soon began to occupy and close universities. The students' complaints included low public expenditure on higher education compared to other countries, high student indebtedness, selective admission policies that limit access of students from low-income families to the more prestigious universities, and high levels of underemployment, that is limited access of low-income graduates to occupations deemed to be commensurate with their level of professional training (Espinoza, González, and McGinn 2016). An external study of the protests concluded that the dissatisfaction of current students in Chile was prompted more by anticipation of low economic rewards once graduated than by judgments that their present training was of low quality (Cummings 2015). In an effort to reduce the perceived cost of higher education relative to future income, a progressive government is now proposing to eliminate all fees for university

enrollment. If, however, student unrest is provoked more by current experiences in the classroom rather than by anticipated future income, this policy may not bring peace on the campus.

University student satisfaction is not a new concern in Chile. As part of their management some universities already carry out regular surveys to monitor levels of student satisfaction. These studies rely primarily on perceptions by students of the quality of physical facilities and instruction offered. The survey results are not public knowledge but published studies based on individual universities report varying levels of satisfaction (Valenzuela and Requena 2006; Palominos-Belmar et al. 2016). However, no research appears to have been done to assess the link between student perceptions of quality and later professional employment and income.

The objective of this study was to determine whether job satisfaction of university graduates is determined principally by income received, or also is influenced by their sense of being well-prepared as professionals. The research sought to answer these questions: Do graduates have a favorable perception of critical elements of the degree program of their university? Do graduates believe that participation in a quality degree program is rewarded by employers? Is satisfaction with their job principally a function of the salary received, or also related to the perceived quality of the degree program, and the prestige of the university attended?

International research assessing students' satisfaction prior to graduation

Early definitions of satisfaction focused on reactions to experiences as a university student in the institution with little attention to what happened after graduation. Universities were concerned about high dropout rates and looking for ways to retain more students. Satisfaction with student life was seen as an important determinant of student persistence or continuation in the university. A now-well-known sociological model (Spady 1970) explained persistence as the product of students' social interactions (engagement in student activities, integration into the university community). Positive interactions with teachers and classmates generated satisfaction which accompanied by academic success encouraged students to keep going.

A second approach to student satisfaction was developed by institutional researchers concerned principally about maintaining high enrollment rates and tuition revenues. They defined universities as service organizations and borrowed instruments from the corporate sector to measure 'consumer satisfaction.' The most frequently used was the SERVQUAL scale (Parasuraman, Zeithaml, and Berry 1985). Little concern was expressed about amount or quality of learning.

A third approach taken by psychologists led to a complex model linking student self-efficacy, course of study and academic performance as predictors of persistence as a student (Lent, Brown, and Hackett 1994). In this model, student persistence in the university is affected by student expectations linked with family socio-economic status and primary and secondary education.

More recently student persistence in pursuing a degree has been associated with institutional factors such as the selectivity of the university. Persistence levels are positively associated with the average student ability level as measured by admission examinations (Titus 2004). These different perspectives have been pursued using a variety of methods to measure students' satisfaction with the university in which they studied (Billups 2008).

The research literature most relevant for understanding university student satisfaction in Chile are prior studies in countries whose universities, like those in Chile, offer primarily undergraduate professional degrees (rather than providing a 'liberal' education which does not prepare for a specific profession). Most of this research has focused on assessment of student satisfaction prior to graduation.

A number of studies have equated 'satisfaction' with positive student perceptions of the quality of the 'services' offered by the university. For example, a study in Pakistan adapted an instrument used in service industries to assess student satisfaction in business schools (Ijaz et al. 2011). The study reviewed 19 other service quality models and isolated five dimensions of perceived quality: tangibles; reputation; cooperation and support; reliability; and responsiveness. All the quality items correlated

highly with satisfaction. Candelas et al. (2013), using a version of a Venezuelan questionnaire (Gento and Vivas 2003), identified six dimensions of satisfaction referring to: academic aspects; administrative aspects; complementary aspects; academic content; environment; and relationships. A study in Mexico measured student satisfaction with Curriculum Content; Teaching Methods; Infrastructure and Facilities; Professors' Skills; and Student's Performance. Levels of satisfaction were most highly correlated with Student's Performance, and secondarily with Professors' Skills. A similar study in Spain showed that students were more satisfied with their professors' teaching when they obtained higher grades (Fernández et al. 2007). In another study however, the critical determinant of level of satisfaction was not the professors' skill but their relationship with the students (Salinas, Morales, and Martínez 2008).

One study of graduates from European universities used ordered choice models to identify factors associated with perceptions of program quality, including: environmental factors, field of study, usefulness of study and other individual-specific characteristics. Graduates who were most satisfied with their course of study rated course content and non-academic social aspects (e.g. relationships with other students) very highly. Limited opportunities to participate in research projects and limited teaching materials and facilities (e.g. textbooks and labs) were major determinants of dissatisfaction. The level of satisfaction with time spent at the university was influenced by both perceptions of the quality of programs and employment experiences (Mora, García-Aracil, and Vila 2007; García-Aracil 2009).

Several studies have linked student acceptance of the corporate or brand image of the university (assessed by 'Would you enroll again in this university?') with student persistence. A Norwegian study assessed the relationships between service quality, facilities, student satisfaction, image of the university college, image of the study program and student loyalty (defined as persistence or continuation in the university) (Helgesen and Nettet 2007). Students made a clear distinction between their perception of the university, and that of the program in which they were enrolled. Student satisfaction was highly related to university loyalty (not dropping out), while the image of the university and that of the program were only slightly related.

A study involving university students in Spain (Beerli and Pérez 2002), and others in India (Thomas 2011), Lebanon (Azoury, Daou, and El Khoury 2013) and Thailand (Kunanusorn and Puttawong 2015) showed that the cognitive component of the image of the university precedes the affective component. The cognitive components include university prestige, cost and program characteristics. Both components contribute to satisfaction. Perceived 'value' of the services received (associated with the university's image) is the antecedent to student satisfaction with those services and the consequence of student satisfaction is student loyalty. 'Value' is a qualitative, undefined expression of the rater's appreciation of the services received. Employability is one contributor to perceived value (Teixeira, da Silva, and Oom do Valle 2015). As perceived value increases so too does a university's prestige. This contributes to higher rankings, inflates image (Hazelkorn 2016), and attracts new students.

Noting the shift from collegial institutions to 'enterprise universities,' researchers in Australia explained student loyalty using a research model based on the European Customer Satisfaction Index (Brown and Mazzarol 2009). In this model, student satisfaction is determined by the perceived value of the education the university delivers; together they impact on loyalty. Other factors include the university's image (which is linked to perceived value and to satisfaction), and the quality of the educational program as experienced by the student. The various dimensions of quality are similar to those in the SERVQUAL instrument (Parasuraman, Zeithaml, and Berry 1985).

Research in Chile on university student satisfaction

In the early 1980s Chile began an extended process of university reform and expansion. The impetus for change was the conversion, by the military government ruling since 1973, of higher education from a state-controlled system to one responsive to market pressures (Ginsburg et al. 2003; Altbach, Reisberg, and Rumbley 2009; Rust, Portnoi, and Bagley 2010). The University of Chile

founded in 1843 was in 1981 split into 17 independent public universities located in various regions. Over the next 10 years 22 new private universities were created. Institutions were encouraged to begin self-financing, by charging tuition and enrollment fees and creating a system of loans and scholarships. After 1988 universities were allowed to operate as commercial institutions that would compete with each other for tuition revenues (Espinoza 2008; Salazar and Leihy 2013). With the restoration of democracy in 1990 four successive governments (of the Christian Democratic and Socialist parties) increased public funding for and access to all levels of education. State expenditures on primary and secondary education were doubled, class sizes were reduced and the school day extended, and teacher qualifications (and salaries) raised. A reduction of failure rates in primary schools was followed by a doubling of enrollments in secondary schools, leading to increased demand for higher education (Elacqua 2012).

Higher education enrollments in Chile had reached 250,000 students by 1980 but by 2016 were passing 1.2 million. Institutional growth was, however, uneven. Some new private universities mushroomed doubling their enrollments year by year. Others expanded slowly, some by choice but more because they failed to attract students. Universities followed different strategies in their struggles to survive. Some entered at the low end of the market, offering a less expensive 'education' marked by large classes, low quality instruction and inadequate facilities (Ginsburg et al. 2003). Others have sought to compete with the more traditional institutions, hiring more highly trained staff, offering programs requiring well-equipped laboratories and classrooms, and seeking closer ties with potential employers (Katz and Spence 2009). Between 1995 and 2005 a number of universities closed because they had been unable to attract and hold a sufficient number of students (Espinoza 2005).

Concerned about high dropout rates, Chilean researchers (Himmel 2002) employed an early model that posited that university retention was a joint product of students' level of academic success and commitment to the institution (Spady 1970). The model asserts that commitment develops from satisfaction with the university experience, which is based principally on the engagement or integration of the student in the various aspects of university life. One university modeled its strategy to keep students on the recommendations of Tinto (1987). Coordinators in each of the various programs provide incoming students with academic guidance and support. Study programs are aimed at students experiencing difficulties in their courses. Extra attention is given to students who appear to be disengaged from university life (García-Huidobro 2002). A conceptual model of the factors explaining retention in a university attributes social and academic integration to satisfaction with the university experience; level of satisfaction is posited as determining the decision to persist or to drop out (Díaz 2008).

Some research suggests that student motivation to remain or to drop out is linked more to a specific degree program than to the university itself. A study of student satisfaction with their studies in the business administration faculty of one university reported more than 60% of students were unsatisfied (Valenzuela and Requena 2006); on the other hand most students in Civil Engineering (in the same university) were highly satisfied (Olea 2009).

Evaluation of student satisfaction with their university and program has become a common practice in Chilean universities, especially in private institutions. Students have become defined as clients, and the university as a service organization. Satisfaction is defined as a measure of the 'perceived' quality of program and institutional elements.

An excellent representation of this approach is a study that defines the determinants of satisfaction of a group of Chilean engineering students at the University of Talca (de la Fuente, Marzo, and Reyes 2010). The researchers' first task was to decide which elements of various programs would be assessed. They reviewed 10 studies carried out in the United States, Europe and various Latin American countries and published in higher education and business administration journals. Some of the articles listed actions or activities (such as communication with the university, social activities); others asked about 'dimensions of behavior' (such as empathy, attitude, formality, competence); others listed 'aspects' (such as academic reputation, academic resources, social activities). The questions

were grouped into seven categories. The first three categories were posited to determine satisfaction with personnel, which in turn impacts on students' global level of satisfaction: students rated service personnel, professors' attitudes and behaviors, and professors' competence. The second four categories were considered to impact directly on global satisfaction. Students rated career opportunities; installations; reputation; and other services (e.g. student center, bus service).

The researchers obtained responses to the seven categories of questions from a representative sample of 289 students enrolled during the period 2002–2008, responded to 54 seven-point Likert scale items. Lowest scores were obtained on questions referring to the existence of facilities, highest scores were assigned to the teaching faculty. Factor analysis indicated the existence of seven factors (corresponding to the seven categories of questions) which explained 62.8% of the variance. The authors then applied structural equation modeling to test the validity of their hypotheses. They concluded that each of the first six categories is important for global satisfaction, with qualities of the professor being most important. A student's likelihood to persist in the university (i.e. to not drop out) is directly related to their global level of satisfaction. The authors also concluded that students were highly satisfied with their academic program (de la Fuente, Marzo, and Reyes 2010).

Research on determinants of job satisfaction

The level of satisfaction a student assigns to his/her job is affected by two factors. First, is the student's perception of the quality of his/her degree program. Graduates who believe they are well-prepared are more likely to feel comfortable in their employment (Caprara et al. 2006). Second, salary and working conditions reinforce the graduate's sense of competence. Research reports conflicting findings, as the relationship is moderated by a variety of factors including incomes of other workers and changes in the firm and the individual (Kucel and Vilalta-Bufi 2013).

Income is considered one of the most frequent determinants of job satisfaction but, as it is mediated by other factors, it may not always appear as dominant. Psychological research demonstrates that job satisfaction varies principally as a function of psychological characteristics of the individual (Cohrs, Abele, and Dette 2006). Social psychologists are more likely to refer to the interaction between job characteristics and individual characteristics (Sousa-Poza and Sousa-Poza 2000). Predictors of job satisfaction of graduates in various European countries vary with occupational sector, country, and job characteristics, as well as with the quality and skill level of university training (Mora, García-Aracil, and Vila 2007; García-Aracil 2009). In South Korea, university prestige has an important influence on salaries offered graduates, but has little impact on job satisfaction (Jung and Lee 2016).

Finally, studies show that employers do assign slightly higher salaries to graduates of prestigious universities, impacting the graduates' job satisfaction (Bills 2003; Jung and Lee 2016).

Guiding hypotheses for this study

Satisfaction with Degree Program. Graduates are more likely to feel satisfied in what they do if they feel competent or efficacious. A student enters university with a degree of social capital and self-confidence derived from his/her family experience and from prior educational experience (Acar 2011). Confident students expect to learn more, and react positively to instruction perceived to be demanding and comprehensive (Kim and Sax 2009; Jury, Smeding, and Darnon 2015). We expected, therefore to find that graduates' satisfaction with their degree program is associated with their level of parental education and quality of secondary schooling (DeWitz, Woolsey, and Walsh 2009; McConney and Perry 2010).

Satisfaction with the degree program is also related to the extent to which the program is seen to prepare students for future work. We expected these perceptions to be based on curriculum content and quality of teaching.

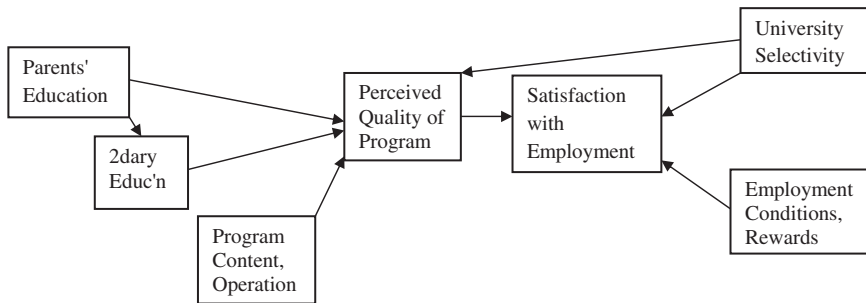


Figure 1. Hypothesized relationships between quality of program, university selectivity, employment, and satisfaction with employment.

Perceptions of quality also depend on the actual program: comprehensiveness of content, quality of teaching styles and presence of activities linking theory and practice and the perceived quality of institutional facilities (Thomas and Galambos 2008; Medrano and Pérez 2010; Candelas et al. 2013).

We further expected that the public prestige of the university attended would influence the graduates' judgment of the quality of their specific degree program.

Job Satisfaction. As reported above, public criticism of universities in Chile frequently blames low economic returns to employment on poor university quality, but international research suggests that the relationship between job satisfaction and salary is weak. We tested the hypothesis in this study. In addition, we tested the common assumption that employers assign better salaries to graduates of prestigious universities. If so, we should then expect a relationship between prestige and job satisfaction.

The relationships tested are described graphically in Figure 1. Parents' Education influences the quality of Secondary Education received; both influence the graduate's perception of the quality of his/her university degree program. This perception is also influenced by the program's content and procedures, and by the university' prestige. Job Satisfaction is a joint function of University Prestige, Program Quality, and the actual conditions and financial rewards of the job.

Methodology

Sample. All participants in this study graduated from three Chilean universities located in Santiago (a list of universities and degree programs in Santiago is displayed in Table 1) in the years 2012, 2013, and 2014. Students were enrolled in degree programs in Psychology, or in Basic Education Teaching. These two programs rank 4th and 7th in size of Chilean university enrollments (CNED 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. The graduates were sampled only from those who had been enrolled in regular day-time classes.

The universities were chosen to represent three levels of admission selectivity. Some universities in Chile select students on the basis of a national test of knowledge of the secondary school curriculum (test of university selection or PSU). This test has been shown to predict university grades in the first year (Pearson 2013). Test scores average 510 and have a standard deviation of 110. The most selective of the three universities (highly selective or HS) only admits students who score 600 or higher on the PSU. The HS is a public university that awards government-funded tuition scholarships to top scorers on the PSU. The HS ranks third of Chilean universities on the QS World University list.

The moderately selective university (MS) was one of the first of the new private universities opened after 1980. As such it receives no direct financial subsidies from the government. A minimum of 475 points on the PSU is required for admission. Students entering the MS between 2011 and 2013 had average scores of 550. The less selective university (LS) also is private and

Table 1. Universities in Santiago according to controller and degree programs offered by knowledge area.

University	Controller	Knowledge areas (degree programs offered)
Universidad de Chile	State	Science, engineering, health, social sciences, teaching, humanities and liberal arts
Pontificia Universidad Católica de Chile	Traditional private	Science, engineering, health, social sciences, teaching, humanities and liberal arts
Universidad de Santiago de Chile	State	Engineering, social sciences, teaching, humanities and liberal arts
Universidad Adolfo Ibáñez	Private	Social sciences, humanities and liberal arts
Universidad Alberto Hurtado	Private	Social sciences, humanities and liberal arts
Universidad de Los Andes	Private	Health, social sciences, humanities and liberal arts
Universidad del Desarrollo	Private	Social sciences, humanities and liberal arts
Universidad Diego Portales	Private	Health, social sciences, engineering, teaching, humanities and liberal arts
Universidad Mayor	Private	Sciences, humanities and arts
Universidad San Sebastián	Private	Health, social sciences, engineering, teaching
Universidad Autónoma de Chile	Private	Health, social sciences, engineering, teaching, humanities and liberal arts
Universidad Nacional Andrés Bello	Private	Science, engineering, health, social sciences, teaching, and humanities
Universidad Finis Terrae	Private	Engineering, health, social sciences, teaching, and humanities
Universidad Metropolitana de Ciencias de la Educación	State	Teaching
Universidad Católica Silva Henríquez	Private	Social sciences, teaching and health
Universidad Tecnológica Metropolitana	State	Engineering and technology
Universidad Bernardo O'Higgins	Private	Social sciences, engineering, teaching and health
Universidad Academia de Humanismo Cristiano	Private	Social sciences and teaching
Universidad Central de Chile	Private	Health, engineering, social sciences, communication, arts and teaching
Universidad de Las Américas	Private	Health, engineering, social sciences, communication, arts and teaching
Universidad Santo Tomás	Private	Science, health, engineering, social sciences, communication, arts and teaching
Universidad Tecnológica de Chile	Private	Engineering and technology
Universidad del Pacífico	Private	Health, social sciences and communication
Universidad Bolivariana	Private	Social sciences and teaching
Universidad de Artes, Ciencias y Comunicación	Private	Arts and communication
Universidad Gabriela Mistral	Private	Health, social sciences, engineering and teaching
Universidad Iberoamericana de Ciencias y Tecnología	Private	Health, social sciences, engineering
Universidad Internacional SEK	Private	Health, social sciences and teaching
Universidad La República	Private	Health, social sciences, engineering and teaching
Universidad Los Leones	Private	Engineering, teaching and social sciences
Universidad Miguel de Cervantes	Private	Engineering and social sciences
Universidad Pedro de Valdivia	Private	Health
Universidad Ucinf	Private	Health, social sciences, engineering, and teaching

more recently established. Applicants are required to take an admission examination applied by the university but all are selected. Students admitted to the LS had average PSU scores of 500 or less.

The sample included 266 persons, about half of the graduates between 2012 and 2014. Participants were chosen randomly from a master list and contacted over the Internet during the months of November and December 2015. Graduates who did not accept the invitation to participate in the study were replaced by random choice. The results of the sampling process are described in Table 2. The differences in the number of cases for each university are a function of enrollment size.

Variables. In July 2015 participants were administered a five page questionnaire (see the appendix). Students were identified by university from which graduated, and professional degree program, Psychology, or Basic Education Teaching. They provided their age and gender, mother's level of education, secondary school attended (public or private), employment history before and after graduation, and current salary.

Table 2. Obtained sample of cases by university and program.

University	Program	Population	Obtained % of total	Number of cases
Less selective university (LS)	Psychology	77	12.4	42
	Teaching	76	12.2	33
Moderately selective university (MS)	Psychology	136	21.9	53
	Teaching	96	15.4	39
Highly selective university (HS)	Psychology	162	26.0	70
	Teaching	75	12.1	29
	Total	622	100	266

The participants evaluated their degree program indicating their degree of agreement (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree) with 27 descriptive statements (see the [appendix](#)). Responses were combined to make three scales. The first scale included 10 items referring to comprehensiveness of the curriculum, coverage and flexibility of the curriculum (theory, practice and value formation), and teaching methods. The questions were of the form 'The theoretical formation I received was adequate' or 'The curriculum seemed coherent and flexible' and 'The teaching styles developed in the program were motivating and stimulated participation.' The average score on these items makes up the variable Program Quality.

The second (4 item) scale asked about the universities's attention to infrastructure to support the program. A typical item was 'The program in which I studied always made available the means necessary to carry out necessary activities.' These items combined to make the variable Infrastructure. The third scale combined five items that asked for a post-graduation assessment of the extent to which the graduate felt prepared for work in their profession. For example, 'The formation I received in my program was sufficient enough for me to perform satisfactorily at work' and 'As a graduate I have an identifiable professional profile.' These items comment on what the graduates experienced in the exercise of their profession once on the job; the scale represents their Satisfaction with their Employment.

Analysis. For each scale, principal components factor analysis yielded one factor. [Table 3](#) presents the results of various tests of the adequacy of the scales. The Kaiser–Meyer–Olkin test assesses the extent to which items can be considered to be measuring the same phenomenon or dimension; the upper limit is 1.00. The Bartlett test indicates that the samples do have equal variances. The three scales each explain more than half of the variance among their items. The Principal Components analysis indicated that the two groups of graduates, Psychology and Teaching, used the same dimensions in assessing their degree programs.

In order to compare the average scale scores of the two groups of graduates and to assess their differences on other variables, we used univariate analysis of variance. This is appropriate for categorical predictor or independent variables. In order to compare the simultaneous effect of several variables, some categorical, others ordinal, on scale scores, we relied on the SPSS Statistics version of multiple linear regression. We used logistic regression in those cases where the dependent variable was categorical.

Findings

Perceived Quality of Programs. The data collected in this study suggest that academic quality, at least in Chilean universities, varies considerably within a given institution. Sets of graduates did not have

Table 3. Tests of constructed scales.

Scale	Number of items in scale	Kaiser–Meyer–Olkin sampling adequacy	Bartlett's test of sphericity	Percent variance explained
Program quality	10	.924	.000	58.7
Attention to infrastructure	4	.768	.000	64.8
Satisfaction	5	.715	.000	73.8

Table 4. Mean ratings of programs in psychology and teaching by graduates (4 is highest).

Program	N	Quality of program		Infrastructure	
		Mean	SD	Mean	SD
Psychology	165	2.91	.48	2.36	.67
Teaching	101	3.11	.78	2.75	.83
Total	266	2.98	.62	2.51	.76
ANOVA test of group difference		$p < .010$		$p = .000$	

similar perceptions of what they experienced as students. As shown in Table 4, the Teaching programs received higher ratings of Program Quality and Attention to Infrastructure than did the Psychology programs.

One possibility is that judgments of program quality are mediated by students' expectations. In Chile as elsewhere, children raised by parents with lower education levels tend to have lower aspiration levels (Carrasco, Zuñiga, and Espinoza 2014). Some 49% of the graduates in this study have mothers with no post-secondary education. Graduates with less-educated mothers were both more likely to graduate in Teaching and to have more favorable perceptions of their programs than did graduates with more-educated mothers.

Aspirations are also shaped by experiences in secondary school. Students in Chile attend one of three kinds of secondary schools. Municipal schools depend principally on public funds, from the municipality and the central government. Voucher schools, although privately owned and managed, receive subsidies from the central government. In addition, they can charge fees; as a result, they generally spend more per student than do municipal schools. A third kind of school accepts no public funding, attracts upper-income students, and graduates students with even higher average test scores. Although research shows that voucher and private schools are no more effective than municipal schools in generating learning (Carnoy and McEwan 2000; Hsieh and Urquiola 2006), they are more successful in attracting students (with the highest test scores) from middle and upper-income families. On average their students score higher than municipal secondary schools on the PSU and therefore are more likely to be admitted to a selective university.

Some voucher schools also recruit students from low income families (with less educated mothers). Table 5 shows that graduates who attended voucher secondary schools on average assign higher scores to Program Quality in the university than do those who went to a municipal school. Graduates who went to private secondary schools are least positive in their ratings of quality. These findings provide only partial support for the hypothesis that perceived quality depends in part of parental education. There is no difference in ratings of infrastructure by municipal and voucher school students; both assign higher scores than do graduates who attended private secondary schools.

More than half of all graduates (53%) continue in the university after graduation. They enroll in courses, specialization programs, master's and doctor degree programs. Of these, 62% are Psychology graduates. Psychology graduates are more likely to enroll in further studies if their mother had post-secondary education (62% to 38%), while Teaching graduates are less likely to continue in the university (46% to 54%) if their mother had post-secondary education. Is this primarily a result of different career aspirations influenced by parents, or differences in the perceived quality

Table 5. Effect of type of secondary school attended on perceptions of program and post-graduation experiences.

Type of Secondary		Quality of program		Infrastructure	
School	N	Mean	SD	Mean	SD
Municipal	79	2.93	.62	2.58	.71
Voucher	146	3.11	.53	2.58	.75
Private	41	2.65	.79	2.11	.77
Total	266	2.98	.62	2.51	.76
ANOVA		$p = .000$		$p < .001$	

of the programs? A logistic regression comparing the effects of Mother's Education, Program Quality and Infrastructure on Further Studies indicates that both mother's education and quality are linked to further study ($p = .052$ and $p = .048$ respectively), while ratings of infrastructure are not.

Satisfaction with Employment. All the graduates were working in the field for which they were trained. As argued above, satisfaction with employment may be influenced by quality of the training that preceded it, but it may also be the result of events occurring after graduation that are unrelated to quality of training. Persons may assign more satisfaction to jobs that are harder to obtain. In addition, jobs differ in their content. The work of a psychologist, for example, may be more difficult or less gratifying than that of a teacher (or vice versa), as a result of the nature of the task, or relations with co-workers or supervisors. Persons may be more highly regarded and treated with more respect because of the reputation of the university they attended. Other people place more value on the financial return from their work.

If we take 'time to get a job' as an indicator of ease of finding work, most graduates had no difficulty in their job search. Including those who had worked while in their degree program, 60.6% of the graduates had a job within two months of graduation, and 85.6% within six months. Only 7.9% of all graduates were without employment a year or more after graduation; of these 3.8% were not looking for work. The time required to find employment is unrelated to graduates' perception of the quality of the program they attended. On the other hand, Teaching graduates who took longer to find employment were more critical of the infrastructure available in their program. This is linked to the inclusion of practice teaching in the Teaching curriculum; universities vary in the number of hours students are given supervised practice. Graduates that have not had supervised teaching practice are hired on a provisional basis, usually at less than full time, for a semester or a year.

There is a significant difference between the salaries or income of Psychology graduates as compared to Teaching graduates. The two groups also differ in their employer. Most of the Psychologists work for the government, most of the teachers are in voucher schools. Table 6 compares graduates by salary. The middle salary category – US\$750–1500 – includes the 2014 income per capita (GDP/capita) for Chile, approximately US\$1185 per month (United Nations Statistics Division 2015). Psychologists on average earn more than Teachers; 21% of the Psychologists earn more than US\$1500 per month, compared to 3.2% of the Teachers.

In most occupations salaries tend to increase with years of service. In this study 2012 graduates are earning more than 2013 or 2014 graduates. Teacher salaries jump after one year of employment, with full-time work. Psychologists in managerial positions are paid significantly more than those who are employees; Teachers who are managers (principals) are paid only slightly more than their colleagues. Salaries are higher for graduates of the most selective university than for the others.

As indicated in prior studies, there is no direct relationship between Program Quality and current Income. In this study, most of the graduates are relatively new on their jobs, and employers will not have had enough evidence of their actual contribution to the firm. There is a significant linear relationship between Infrastructure ratings (but not for Program Quality) and Income for Psychology graduates. The relationship between the two program scales and Income for Teaching graduates is nonlinear; those receiving mid-level incomes are more positive than either extreme.

We have no direct measure of the prestige of the program or the university. For the former, we use participants' level of agreement with the statement 'On comparing ourselves to graduates of other programs I became aware that employers are more favorable toward us.' We call this variable Image. This rating was made at the same time as those in Program Quality, and no doubt its score

Table 6. Average monthly earnings of graduates by profession.

Program	US\$750		US\$750–1500		>US\$1500		Total N
	N	%	N	%	N	%	
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

Table 7. Multiple regression of factors influencing satisfaction with employment.

		Unstandardized coefficients		Standardized coefficients		
		B	Std. error	Beta	T	Sig.
Psychology graduates						
Coefficients ^a						
1	(Constant)	.653	1.409		0.464	.643
	MoEd	.248	0.309	.042	0.804	.423
	Type of secondary	.093	0.228	.022	0.408	.684
	ProgQual	.410	0.036	.687	11.528	.000
	Infrastr	-.179	0.068	-.165	-2.631	.009
	TimetoJob	-.065	0.221	-.017	-0.294	.769
	Income	.253	0.259	.055	0.976	.331
	Image	.539	0.184	.163	2.932	.004
	Selectivity	.956	0.205	.265	4.673	.000
^a Dependent variable: Satisfn. $R^2 = .612$, adjusted $R^2 = .591$; $N = 156$.						
		Unstandardized coefficients		Standardized coefficients		
		B	Std. error	Beta	T	Sig.
Teaching graduates						
Coefficients ^b						
1	(Constant)	-1.865	1.075		-1.735	.086
	MoEd	0.205	0.338	0.025	0.607	.545
	Type of secondary	0.408	0.275	0.063	1.484	.141
	ProgQual	0.425	0.026	0.839	16.390	.000
	Infrastr	0.080	0.060	0.067	1.342	.183
	TimetoJob	-0.686	0.260	-0.107	-2.636	.010
	Income	0.429	0.343	0.058	1.251	.214
	Image	0.417	0.180	0.098	2.320	.023
	Prestige	0.677	0.208	0.137	3.253	.002
^b Dependent variable: Satisfn. $R^2 = .894$, adjusted $R^2 = .884$; $N = 93$.						

reflects a response bias. The difference in responses of Psychology and Teaching graduates is not significant. We used the level of selectivity (minimal score on PSU) as an indicator of university prestige. The two variables, Image and Prestige, are significantly correlated ($r = .283$). Both are unrelated to Program Quality. The rating of infrastructure is inverse, that is, the most selective university has less positive ratings of infrastructure.

Ratings of Satisfaction with employment can therefore be influenced by several different factors. Given differences in the two types of programs, we separate the analyses. Table 7 presents results for Psychology and Teaching graduates.

The level of satisfaction with current employment of graduates in Psychology from these three universities is determined principally by the quality of their degree program, and independently by the prestige associated with the selectivity of the university. Program image is a third determinant. We do not have an explanation for the negative effect of the infrastructure variable.

Teaching graduates are relatively more influenced by Program Quality and less by university prestige than are Psychology graduates. Those who took longer to find a position ended up more satisfied than those who already had a position or made an early choice. The comparison by employers of their program with others (Image) also contributes to their degree of satisfaction.

Discussion

This study shows that there are differences across universities in the quality of professional degree programs they offer, assessed in terms of what graduates experience once they are employed. Satisfaction with employment after graduation is determined principally by perceptions of the quality of the professional program that preceded it. In other words, if graduates believe that their program taught pertinent material well, they are more likely to enjoy their work. This finding fits the psychological model of satisfaction, in which self-efficacy or sense of agency assumes high importance.

The level of selectivity of a university also has a significant impact on satisfaction with employment, but much less than the graduates' perception of the quality of their program. Graduates of the most selective university on average were less positive about the quality of their training than those from other universities, but when other factors are taken the prestige of their institution contributes to their satisfaction with their work.

As in other students, income is not a significant contributor to satisfaction with current employment, although on average incomes are higher for graduates of selective universities than for those that are not selective. The university affiliation of the new hire may be used by employers as a signal of the candidate's skill level, but it is an unreliable indicator if we presume that the graduates' perceptions of quality are valid (income-program quality $r = .102$). Put more bluntly, the selectivity of the university does not guarantee the quality of their degree programs.

Graduates of Teaching degree programs are additionally satisfied if employment after graduation was relatively easy to find. Recent graduates in Psychology and in Basic Education Teaching had relatively little difficulty in finding employment at current wage rates and were not underemployed.

The findings of this study are highly suggestive, but should not be generalized to other professional degree programs. Although different programs can be assessed using the same indicators, within a given university they yield significantly different ratings.

Conclusion

These results should be encouraging for government and university officials who must respond to student criticisms of the quality and cost of higher education. Most participants in this study made positive judgments about the quality of their programs, and felt that their current employment was making effective use of the knowledge and skills acquired in their programs. The study suggests that, at least in these three universities, professional degree programs are successful in developing relevant knowledge and skills in their students and graduates, and that therefore graduates look back on their university experience with appreciation. Testimonials from students and from graduates about the quality of their education contradict complaints about low quality.

The results suggest that dissatisfaction with university quality is not widespread, making the family burden of high university costs a more likely cause of student unrest. The rapid expansion of university enrollments, and graduates, may well have exceeded labor market demand, which would result in lower wages. The cost burden must weigh heaviest on families whose students leave university before completing their degree and face limited employment opportunities. Improving student retention and completion rates would allow universities to be more selective in their admissions. Improved labor market information might guide more students into programs with better employment practices.

At the same time, the results could be used to support a claim that unequal access to quality programs contributes to the high level of income inequality that persists in Chile. To resolve this assertion requires a more complex study, involving a much larger sample of universities, and of academic programs. One possible outcome is evidence that quality programs are not found exclusively in universities with high rankings or, more likely, that not all degree programs in a given university are of the same quality. It might well be that many excellent programs are to be found in universities with lower prestige rankings.

In the present economy of Chile, the link between university prestige and employers' hiring practices reinforces severe income inequality. Research demonstrating that concentration of quality in a few universities contributes this problem could support efforts at significant reform. This might entail either leveling of costs of university attendance (and eliminating other socio-economic status-linked barriers to prestigious institutions) or efforts to raise the quality of non-prestigious to that of the currently favored. Either way, the survival of participatory democracy in Chile requires consideration of the link between educational quality and political stability.

Acknowledgements

The authors are solely responsible for the contents of this report.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This research was supported by the National Fund for Scientific and Technological Development of Chile (CONICYT) through the Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT Project No. 1151016).

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Appendix: Questionnaire for university graduates and degree holders

1. Name of degree program
2. Birth date
3. Sex
4. Commune in which reside
5. Highest education level achieved by your mother
6. Type of secondary school (public/subsidized/prime) finished 4th year
7. Academic situation today (graduated/with degree)
8. Period in which were student in program (beginning year/end year)
9. In other higher education programs after finishing?
10. What is the program and length in semester
11. Present work situation
12. If working now, do you have another paying job besides, in your field?
13. Length of work day (part time/half time/3 quarter time/full time)
14. Average monthly income from work
15. Position on job (management/employee/independent professional)
16. In what sector employed; public or private
17. Fit between degree program and employment

18. Degree of satisfaction with employment
19. Degree of success as a professional
20. Length of time to find first job
21. My degree program was demanding.
22. The training I received in my degree program was of high quality.
23. If I had the opportunity to take my program again I would choose the institution where I studied.
24. As a graduate of the program and the institution where I studied I have a professional identity.
25. The program gave me a training that permitted me to obtain the academic degree and professional title without problems.
26. The theoretical training that the degree program gave me was adequate.
27. The practical training that the program gave me was appropriate.
28. The personal and value training the program gave me was superb.
29. When I studied the program they exposed me to the curriculum.
30. The program and/or institution where I studied had a good policy of support in entering the labor force
31. The training I received was sufficient to perform satisfactorily in the world of work.
32. The preparation for work that the program gave me matched the requirements of the workplace.
33. On graduating from the program, I was hired at a level that met my professional expectations and income requirements.
34. When I compare myself with graduates from other programs I am aware that the reaction of employers was more favorable toward us.
35. The study plan included activities that linked students with the professional environment.
36. The study plan and course program was fulfilled completely.
37. The curriculum seemed coherent and flexible to me.
38. The curriculum proposal clearly identified the minimal knowledge and skills required to graduate.
39. The learning objectives of the Study Plan were made clear to me when I was in the program.
40. The course contents were appropriate for my training and performance as a professional.
41. Some of the course contents were repeated unnecessarily in two or more courses.
42. The course activities made it possible for me to combine theory and practice for my performance in the work place.
43. The teaching styles of the program were motivating and stimulated participation.
44. The institution was constantly concerned with improving the quality of the infrastructure.
45. The program in which I studied always provided the means (equipment) necessary to carry out activities (seminars, field trips, etc.) necessary for my training.
46. The institution and the program had an adequate library and places to study.
47. The lab and workshop sessions were correctly implemented.