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Part-time Work, Job Satisfaction and Well-being: Evidence from a Developing OECD Country

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ABSTRACT *We estimate the effects of part-time work on job and life satisfaction using new data for Chile. While part-time work is being promoted to increase female labour participation in many countries, there are concerns about its quality and the overall effect on well-being of such policies. We estimate models for job and life satisfaction addressing for endogeneity and selectivity bias. We found that part-time work has a negative effect on job satisfaction and well-being for men; however, when looking at just women, the negative effect is reversed. This should be considered when designing public policies oriented at increasing female labour participation through part-time work.*

1. Introduction

There is a growing literature on the relationship between part-time work and women's well-being (Booth & Van Ours, 2008; Connelly & Gregory, 2008; Sousa-Poza & Sousa-Poza, 2000). The evidence shows that women have greater job and life satisfaction when employed part-time, which agrees with the hypothesis that it would allow formal work to be compatible with family life (Alesina, Giuliano, & Nunn, 2011; Assadullah & Fernandez, 2008). This has been accompanied by a steady increase in part-time work employment in most OECD countries in the last decade (OECD, 2010).

This evidence comes largely from developed countries, making it hard to extrapolate these findings to less developed countries. In OECD countries, part-time work is mostly voluntary and labour markets exhibit high rates of formality and flexibility in pursuing part-time arrangements (OECD, 2010). Meanwhile, the scarce evidence from the developing world suggests that labour constraints and legislation may be affecting the choice of work hours and casts some doubts on the assumed female preferences for part-time jobs (López Bóo, Madrigal, & Pagés, 2010). Even despite these concerns, part-time work is being promoted in Latin America and Caribbean countries as a way of gaining a new balance between work and family for women (Chioda & Verdú, 2013).

In Chile, part-time work has been promoted to increase the female labour participation rate, since it is one of the lowest in the region, only 43 per cent according to the 2009 CASEN survey (Encuesta de Caracterización Socioeconómica Nacional) and about 15 percentage points less than other OECD countries (OECD, 2010; Rau, 2010). The advantage of promoting part-time work is twofold:

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countries with greater shares of part-time workers have higher labour participation rates (OECD, 2010), thus promoting part-time work could be an effective policy to increase female labour participation rate. Additionally, there is evidence of women's preferences for part-time jobs, at least in developed countries. Thus, part-time work could increase female well-being measured as job and life satisfaction.

The aim of this article is to analyse the effects of part-time work on job satisfaction and well-being for women in Chile, a middle-income country that has recently joined the OECD. We contribute to the literature by providing new evidence for a developing economy that shares similarities with developed countries in terms of labour market institutions (unemployment insurance, minimum wage and active labour market programmes) without completing the transition to economic development (a significant share of the labour market is informal work, high wage inequality and gender wage gap among others).

We address the endogeneity of the part-time decision by estimating an ordered probit with a binary endogenous regressor for part-time status. We also include specifications that jointly correct for endogeneity of the part-time decision and selectivity bias of the decision to participate in the labour market.¹

We present evidence on the determinants of subjective well-being and, in particular, how part-time work affects job and life satisfaction. Though we find a negative effect of part-time work on job and life satisfaction for men, this effect is not significant for women. The latter result contrasts with the evidence reported for developed countries (Booth & Van Ours, 2008) where, typically, women working part-time are more satisfied than those working full-time. Our results can be explained by the prevalence of negative characteristics of part-time work, such as informality and poor working conditions as argued by López Bóo et al. (2010). These negative attributes can be compensated by positive characteristics of part-time jobs such as increased flexibility, which can allow women to complement home activities with formal work (Assadullah & Fernández, 2008; Alesina et al., 2011).

The case of Chile is interesting for several reasons. First, there is little evidence on the determinants of job satisfaction and subjective well-being in developing countries and their relationship with labour market variables. López Bóo et al. (2010) analyse the effect of part-time work in women's job satisfaction in Honduras. They find a negative effect of part-time work on job satisfaction for both men and women. Cassar (2010) provides evidence on the determinants of job satisfaction in Chile. She finds that job protection, workplace facilities, independence and empowerment at work all have a positive relationship with job satisfaction. However, she does not study the relationship between job satisfaction and part-time work and does not control for endogeneity or selectivity of the labour participation decision. Lastly, Switek (2012) studies the determinants of life satisfaction for a sample of 17 Latin American countries. She finds that public social spending and a measure of development has the greater impact in life satisfaction. As in Cassar (2010), she does not assess the effect of part-time work on well-being.

Second, it is interesting to study female job satisfaction and its relationship with part-time work, given women's historically low participation rates and recent public policy efforts aiming at increasing the rates through more part-time employment opportunities. In Chile, these efforts include the 2001 labour reform and wage subsidies for female workers introduced in 2012. These policies have contributed to slightly increase the share of women participating in the labour force and the percentage of them working part-time.

Third, an increase in per capita income does not necessarily translate into greater well-being, at least in developed countries (Blanchflower & Oswald, 2011; Ferrer-i-Carbonell & Frijters, 2004; Kahneman & Deaton, 2010). It is interesting to study this relationship in a developing country and provide new evidence regarding the link between well-being and income.

This article is organised as follows. The following section describes the part-time work and female labour market participation situation in Chile. Section 3 discusses the identification strategy and the estimation method. Section 4 describes the data. In Section 5 we present the main results and, finally, Section 6 offers some conclusions.

2. Part-time Work and Female Labour Participation Rate

Female labour participation has garnered a great deal of attention in Chile in recent decades. The discussion has centred on how to increase female participation in the labour market (Benvin & Perticar , 2007; Bravo, Contreras, & Puentes, 2008; Encina & Mart nez, 2009; Medrano, 2009; Rau, 2010). The figures show a significant gap in terms of labour force participation between men and women, and a clear disadvantage in female labour force participation relative to other countries as shown in Table 1. Researchers and policy-makers have been interested in the impact of raising the female participation rate on families' socio-economic situations and on country's potential economic growth (Velasco & Huneus, 2011).

In 2001 there was a labour market reform targeted at raising female participation in the labour market by promoting part-time work.² In particular, it regulates the duration and continuity of the working day, establishes minimum wage proportionality, and gives equal rights to workers in terms of fringe benefits. In spite of these efforts, rates of part-time work are still relatively low and have not significantly increased as a result of the reform, mainly due to labour costs and cultural factors. In effect, labour costs are significantly higher for women, given maternity leave and child-care regulations that impose a significant share of the associated costs on the employer.³

Rau (2010) analyses the evolution of part-time work in Chile and its determinants. He shows that part-time workers (wage earners) represent about 16 per cent of total employment, which is low relative to other OECD countries. He proposes a set of policies to encourage economically inactive women to opt for these jobs. Part-time work could encourage the incorporation of women into the labour force (Mizala & Romaguera, 2004), and there also is evidence indicating that these jobs provide a higher level of well-being for women (Assadullah & Fern ndez, 2008; Booth & Van Ours, 2008; Ferrer-i-Carbonell & Van Praag, 2008; Sousa-Poza & Sousa-Poza, 2000).

Women might be more satisfied in part-time jobs because of customs and cultural factors and because it allows formal work to be compatible with family life (duality of roles). These jobs allow women to gain self-esteem by working formally, make their households more fiscally secure, while allowing women to also care for their families (Assadullah & Fern ndez, 2008; L pez B o et al., 2010).

According to information from the ENETS 2009–2010 survey, there are significant differences in preferences for time use by gender.⁴ For instance, relative to men, women prefer more to have flexi-time (30.7 vs 22.4%), are twice as likely to engage in childcare (40 vs 21.4%), and are in charge of children's 10 times as often as men (73.8 vs 7.1%). Moreover, according to the CASEN survey, 53 per cent of labour inactive women would accept a job with less than 40 hours of work per week, which shows that there is significant scope to increase this type of employment.⁵ There is evidence that these types of jobs are often precarious since they are mostly informal (Leiva, 2000). However, Rau (2010)

Table 1. Labour participation rate in Latin American and selected OECD countries

	Women (percentage)	Men (percentage)
Argentina	51.1	74.8
Bolivia	62.1	82.9
Brazil	59.9	80.7
Chile	43.8	70.3
Spain	49.3	65.6
USA	58.9	70.3
France	50.9	58.7
Mexico	43.4	79.1
Peru	57.4	82.2
Portugal	56.2	68.0
Venezuela	50.8	80.8

Source: World Development Indicators (World Bank 2008).

Table 2. Characteristics of the part-time jobs

	Part-time	Full-time	All
Wage per hour (CLP 2009)	2,660	1,924	1,974
Work contract = 1	49.0	87.5	84.8
Contractual relation is permanent = 1	42.9	70.4	68.5
Contributes to retirement pension = 1	77.9	92.4	91.7
Unemployment insurance = 1	34.1	72.6	69.9
Tenure (years)	3.07	5.87	5.67

Source: CASEN survey, 2009.

Notes: Part-time work defined as 30 hours or less per week. Rows two to six correspond to percentages.

shows that there is a part-time pay premium of about 60 per cent for hourly wages. This combination makes it interesting to explore different dimensions of part-time work such as subjective well-being, and to tackle the question, are part-time female workers comparatively better-off?

Part-time and full-time jobs are quite different. As shown in Table 2, part-time jobs have a lower probability of having an employment contract (49.0 vs 87.5%) or a permanent contractual relationship (42.9 vs 70.4%). Moreover, these kinds of jobs are less protected in terms of unemployment insurance (34.1 vs 72.6%). Finally, part-time jobs have a shorter average duration. The existence of a part-time wage premium (per hour) is interesting, but this is the only dimension where part-time jobs offer an advantage over full-time jobs.⁶ According to Rau and Rojas (2011) the part-time wage premium corresponds mainly to a compensating differences.

Given these factors (informality and wage premium), it is not clear that people should prefer part-time jobs. The next section discusses the identification strategy and estimation method to assess whether or not part-time jobs are preferred.

3. Identification Strategy and Estimation Method

The most straightforward strategy to estimate the determinants of job satisfaction and well-being and its relationship with part-time work is to estimate a linear model by ordinary least squares (OLS). Therefore, the model would be the following:

$$h = x'\beta + \gamma w + u, \quad (1)$$

where h is a measure of subjective well-being (job or life satisfaction), x' represents a set of factors affecting well-being, w is a dummy that indicates whether an individual works part-time, and u is an unobservable residual term. The first problem with this strategy is that it assumes that the dependent variable is continuous, which is typically not the case. In our case the answers for subjective well-being questions (job and life satisfaction) are ordinal, ranging from 1 (not at all satisfied) to 4 (very satisfied). Additionally, the part-time work decision is endogenous and estimators based in this type of models will be inconsistent and inefficient.

An ordered probit takes the ordinal nature of the dependent variable into account and is commonly used in this literature (Assadullah & Fernández, 2008; Booth & Van Ours, 2008; Cassar, 2010; Mumford & Smith, 2012).

In our model, let h^* be a latent variable measuring the subjective well-being of an individual. The model can be expressed as follows:

$$h^* = x'\beta + \gamma w + u. \quad (2)$$

In the sample we observe only ordinal categories of well-being that can be related to the latent variable as $h_i = j$ if $c_{j-1} < h_i^* < c_j$ with $j = \{1, 2, 3, 4\}$, $c_0 = -\infty$ and $c_4 = +\infty$. Thus, $c = (c_1, c_2, c_3)$, β , and

γ are unknown parameters to estimate by maximum likelihood. The conditional probability of being in a particular category j is:

$$P(h = j | x, w) = \Phi(c_j - x'\beta - \gamma w) - \Phi(c_{j-1} - x'\beta - \gamma w), \quad (3)$$

where Φ is the cumulative density function (cdf) of a normal distribution.⁷ The marginal effects of a change in the k -th regressor x_k are as follows (assuming that x_k is continuous):

$$\frac{\partial P(h = j | x, w)}{\partial x_k} = [\phi(c_{j-1} - x'\beta - \gamma w) - \phi(c_j - x'\beta - \gamma w)]\beta_k. \quad (4)$$

It is interesting to discuss the interpretation of the sign of the parameter of interest β_k . Let assume that β_k is positive; thus, the partial effect is negative for the first category $\partial P(h = 1 | x, w) / \partial x_k = -\phi(c_1 - x'\beta - \gamma w)\beta_k$ and positive for the last category $\partial P(h = 4) / \partial x_k = \phi(c_3 - x'\beta - \gamma w)\beta_k$. However, what happens in the middle cells, $P(h = 2 | x, w)$ and $P(h = 3 | x, w)$, is ambiguous and must be calculated. For discrete changes of discrete variables, such as w , we have to compute the difference $P(h = j | x, w = 1) - P(h = j | x, w = 0)$.

As stated before, the model includes a dummy variable that indicates whether the individual is employed part-time or not (w). Given that being employed part-time might be correlated with the error term (people who are more optimistic might have higher job satisfaction and also be more likely to work longer hours), the next step is to estimate an ordered probit model with a binary endogenous explanatory variable. Identification is achieved by the nonlinearity of the model and is strengthened by some excluded instruments discussed below. We also correct our estimates simultaneously for selection bias and endogeneity. A formal derivation of the log likelihood function for this model is provided in the Online Appendix.⁸

The covariates included in the different econometric specifications are based on the literature (Booth & Van Ours, 2008; Cassar, 2010; Clark, Oswald, & Warr, 1996) and data availability. We include dummies for part-time work, women (and its interaction with part-time work), a dummy for being married (marital status could affect job satisfaction through channels such as productivity⁹), a dummy for having children (people with children may be more concerned with working long hours), self-employment, firm size, log of hourly wages, age (and its square), tenure and years of schooling as explanatory variables.¹⁰ When the dependent variable is job satisfaction, we also include industry dummies as covariates to capture differences in labour demand for part-time work by industry. Lastly, following Ferrer-i-Carbonell (2005) we include a measure of reference group wages.¹¹

When we control for the endogeneity of being employed part-time there is an auxiliary equation (first stage) that models the part-time decision (see the Online Appendix) that includes standard covariates seen in the literature. We include non-labour income, age, schooling, a dummy for being head of household, dummies for having children (0–4 years old), a dummy for being married, a female dummy variable, an interaction between being female and having children (0–4 years old), industry dummies and the log of hourly wages as controls.

Therefore, the excluded instruments for job satisfaction specifications are non-labour income and being head of household. In our opinion, these variables are plausible instruments, since they should not be correlated with the unobserved error term in the job satisfaction equation that includes personality traits and genetic factors (assumed time invariant and determined at birth), but according to the literature they are correlated with the decision to work part-time.¹²

When the dependent variable is life satisfaction, the excluded instruments are head of household and the industry dummies. We cannot use non-labour income as excluded instrument, since a measure of household income is included in the life satisfaction equation (key explanatory variables reported in the relevant literature). The industry dummies are plausible instruments in this case, since they should not be correlated with the unobserved term of the life satisfaction equation (personality traits or genetic factors) but are correlated with part-time employment due to labour demand reasons. Part-time

vacancies vary by industry, for example, retail and services offers more part-time vacancies than construction (Rau, 2010).

Finally, the selection equation includes variables typically used in the literature including non-labour income, age (and its square), dummy for head of household, schooling, dummies for children (0–4 and 5–17 years old), dummy for being married, dummy for being female, and two interaction dummies between female and number of children (0–4 and 5–17 years old) as explanatory variables. Geographical dummies were also included for life satisfaction specifications. The excluded instruments are being head of the household, non-labour income, and geographical dummies for job satisfaction and being head of the household for life satisfaction.¹³

4. Data

The main source of information is the CASEN survey, which is a nationally representative cross-section survey and is a fundamental tool for social policy because it contains valuable data on Chilean families regarding housing, education, health and employment.

Additionally, The Oxford Poverty and Human Development Initiative (OPHI) conducted a survey in 2008/2009 with a sub-sample of 2,000 households from the 2006 round of the CASEN survey. This survey was designed to understand the missing dimensions of poverty.¹⁴

Several questions from the 2006 CASEN survey were included in this special round along with the new questions. It contains data on each of the dimensions that OPHI has identified as being potentially missing: income; health; education; housing; employment quality; empowerment; physical safety; dignity; and subjective well-being.

The key survey questions for our analysis are: (1) in general, how satisfied or unsatisfied are you with your job: (i) very satisfied; (ii) fairly satisfied; (iii) not very satisfied; (iv) not at all satisfied? And (2) in general, how satisfied or unsatisfied are you with your life overall: (i) very satisfied; (ii) fairly satisfied; (iii) not very satisfied; (iv) not at all satisfied? The answers to these questions provide the basic input to analysing the determinants of subjective well-being in Chile. For ease of interpretation we code these answers from 1 to 4, with 1 being ‘not satisfied at all’ and 4 being ‘very satisfied’.

A first look at the data is provided in Table 3, which presents average job and life satisfaction for different groups. As can be noted there is a significant degree of heterogeneity in average job and life satisfaction. For instance, men report slightly higher life (and also job) satisfaction than women. It would seem that younger people enjoy greater life satisfaction, but as we will see in the next section this relationship is U-shaped in age. The relationship between life satisfaction and schooling level is positive but not monotonic. For instance, there is a high level of life satisfaction among people who did not finish even primary education. However, higher education is associated with higher subjective well-being, especially with job satisfaction. There is a direct association between subjective well-being and income level. Divorced and widowed people have less life satisfaction than married and single ones. With regard to employment status, the unemployed are very unsatisfied with their lives. Full-time workers have greater job satisfaction than part-time workers. Religious persons seem to be happier, and have greater life and job satisfaction.¹⁵ The next section presents the main results of the econometric analysis.

5. Results

5.1 Part-time Work and Job Satisfaction

In this section, we explore whether part-time work has a positive effect on women’s job satisfaction. This would be consistent with the view that part-time jobs allow formal work to be compatible with family life. As stated previously, this analysis is aimed specifically at women because of the duality of their roles in society and their low labour force participation.

Table 3. Job satisfaction and life satisfaction

	Job satisfaction	Life satisfaction
Male	2.713 (0.982)	3.074 (0.800)
Female	2.595 (0.929)	2.981 (0.780)
15–24 years	2.439 (0.891)	3.219 (0.656)
25–34 years	2.648 (0.975)	3.098 (0.789)
35–44 years	2.631 (0.958)	3.044 (0.773)
45–54 years	2.728 (0.923)	2.974 (0.820)
55–64 years	2.648 (0.980)	3.028 (0.772)
≥ 65 years	2.529 (0.993)	2.928 (0.826)
Non-indigenous	2.669 (0.955)	3.022 (0.786)
Indigenous	2.429 (0.953)	3.600 (0.847)
No schooling	2.476 (1.132)	2.894 (0.960)
Primary incomplete	2.936 (1.146)	3.163 (0.797)
Primary complete	2.495 (0.920)	2.919 (0.789)
Secondary incomplete	2.585 (0.916)	2.924 (0.757)
Secondary complete	2.632 (0.962)	3.060 (0.763)
Higher incomplete	2.754 (0.952)	3.262 (0.673)
Higher complete	3.219 (0.773)	3.336 (0.656)
Quintile I	2.225 (0.952)	2.812 (0.895)
Quintile II	2.439 (0.953)	2.873 (0.774)
Quintile III	2.649 (0.868)	3.038 (0.737)
Quintile IV	2.833 (0.883)	3.148 (0.734)
Quintile V	3.190 (0.808)	3.320 (0.656)
Married	2.688 (0.945)	3.072 (0.771)
Divorced	2.495 (0.985)	2.872 (0.885)
Widowed	2.439 (1.028)	2.808 (0.756)
Single	2.733 (0.958)	3.104 (0.814)
Employed	2.818 (0.912)	3.098 (0.773)
Unemployed	—	2.695 (0.828)
Out of labour force	—	2.896 (0.801)
Full-time	2.842 (0.905)	3.123 (0.723)
Part-time	2.553 (0.950)	3.066 (0.836)
Non-religious	2.592 (0.938)	2.957 (0.762)
Religious	2.749 (0.973)	3.114 (0.791)
North	2.739 (0.962)	3.124 (0.823)
Centre	2.621 (0.942)	2.989 (0.778)
South	2.689 (1.028)	3.081 (0.805)

Notes: Standard deviation are in parenthesis. Job and life satisfaction are measured on a scale ranging from 1 (not satisfied at all) to 4 (very satisfied).

In [Table 4](#) we present results for job satisfaction regressions. The first model, column (1), is estimated by OLS; the second column (2) is a standard ordered probit model; and the third column (3) assumes the existence of an endogeneity problem regarding the decision of having a part-time job. Therefore, the model estimated in column (3) includes an auxiliary equation for modelling the decision to work part-time. That is why the ρ_{12} parameter appears in that column (see the Online Appendix for details). We estimate this auxiliary equation following [Rau \(2010\)](#).

In general terms our results are similar to those from previous studies of developed countries. As expected, wage positively affects job satisfaction and is significant at 1 per cent. Relative wage has a negative effect on well-being, as in [Clark and Oswald \(1996\)](#); however, this effect is not significant.

As can be observed, the part-time work coefficient is negative and significant, but its interaction with being female is positive and significant. There are two interesting findings. First, the effect of part-time work on job satisfaction is negative and significant for men. Thus, among all part-time workers, women are more satisfied than men. Second, when looking at just women, part-time work

Table 4. Determinants of job satisfaction

	(1)	(2)	(3)
Part-time	-0.4262** (0.1961)	-0.5592** (0.2528)	-1.1643 (0.7339)
Female and part-time	0.5203** (0.2479)	0.6676** (0.3157)	0.7989** (0.3254)
Female	0.0246 (0.0803)	0.0227 (0.1027)	0.0532 (0.1076)
Self-employment	0.1001 (0.1008)	0.1424 (0.1287)	0.1404 (0.1275)
Size of the firm: 2–5	0.1061 (0.1039)	0.1345 (0.1308)	0.1290 (0.1304)
Size of the firm: 6–9	0.3271** (0.1509)	0.4098** (0.1930)	0.4049** (0.1920)
Size of the firm: 10–49	0.1911 (0.1210)	0.2398 (0.1536)	0.2340 (0.1526)
Size of the firm: 50–199	0.1932 (0.1351)	0.2597 (0.1704)	0.2566 (0.1684)
Size of the firm: >200	0.2514* (0.1354)	0.3167* (0.1717)	0.3116* (0.1701)
Log(wage)	0.3538*** (0.0543)	0.4719*** (0.0773)	0.4696*** (0.0760)
Log(reference wage)	-0.1875* (0.1104)	-0.2063 (0.1445)	-0.2051 (0.1430)
Age	-0.0091 (0.0244)	-0.0142 (0.0318)	-0.0179 (0.0315)
Age squared	0.0002 (0.0002)	0.0003 (0.0003)	0.0003 (0.0003)
Tenure	-0.0017 (0.0040)	-0.0028 (0.0052)	-0.0027 (0.0052)
Schooling	0.0307* (0.0161)	0.0374* (0.0208)	0.0360* (0.0208)
Married	-0.0140 (0.0740)	-0.0177 (0.0935)	-0.0004 (0.0959)
Children	-0.1940** (0.0872)	-0.2654** (0.1161)	-0.2648** (0.1148)
Industry dummies	Yes	Yes	Yes
ρ_{12}	—	—	0.2856
c_1	—	2.0416	1.8996
c_2	—	3.0951	2.9428
c_3	—	4.2695**	4.1044**
(Pseudo) R^2	0.164	0.0705	0.0772
N	721	721	721

Notes: *10 per cent significance level; **5 per cent significance level; ***1 per cent significance level. (1) OLS; (2) ordered probit (not considering endogeneity of the part-time work decision); (3) ordered probit (correcting the endogeneity of the part-time work decision). ρ_{12} refers to the endogeneity of the model and it is not significant at 10 per cent. McFadden's R^2 are calculated for models (2) and (3). Standard deviations are in parenthesis. The sample includes only employed individuals.

does not have any effect on job satisfaction. We based the latter remark in the following. We calculate the discrete impact of part-time work on job satisfaction for women only as follows:

$$\Delta P(JS = j | female) = P(JS = j | female, w = 1) - P(JS = j | female, w = 0), \quad (5)$$

where $j = \{1, 2, 3, 4\}$ and the rest of the covariates are evaluated at their sample means. As explained before, w is a dummy variable that indicates whether a female worker has a part-time job or not. With

Table 5. Discrete effect of part-time job on job satisfaction for women

	<i>JS</i> = 1 Not at all satisfied	<i>JS</i> = 2 Net very satisfied	<i>JS</i> = 3 Fairly satisfied	<i>JS</i> = 4 Very satisfied
Part-time	-0.0166	-0.0321	0.0048	0.0438

Notes: discrete effect of part-time work on the probability of answering a given level of job satisfaction $j = (1, 2, 3, 4)$ for females (model 2), provided by equation (5): $\Delta P(JS = j | female) = P(JS = j | female, w = 1) - P(JS = j | female, w = 0)$ where $w = 1$ for part-time work and $w = 0$ for full-time. *10 per cent significance level; **5 per cent significance level; ***1 per cent significance level.

this expression we are evaluating the effect of working part-time on the probability of being in one of the j categories of job satisfaction.

The results of these partial effects for model (2) appear in Table 5. As can be observed, part-time work slightly increases the probability of being fairly or very satisfied ($j = 3$ and $j = 4$) and slightly decreases the probability of being not at all or not very satisfied ($j = 1, j = 2$). However, these effects are not statistically significant. To state that, we follow Greene and Hensher (2010), who argue that significance tests can be conducted on either the partial effect or on the structural coefficients.¹⁶ Hence, to test the null hypothesis that women working part-time are as satisfied as those working full time we perform a two-sided t-test. The null hypothesis is that the sum of the coefficients (part-time work and its interaction with being female) is equal to zero against the alternative of being different from zero. If we accept (fail to reject) that null hypothesis, women employed part-time are as satisfied as women employed full-time. Using model (2) of Table 4 we test this hypothesis obtaining a p-value equal to 0.482; thus, we accept the null hypothesis.¹⁷ Thus, part-time work does not have a significant effect on job satisfaction for woman.

When we control for bias selection and endogeneity, the main results do not change as can be observed in Table 6.¹⁸ Again, we test the null hypothesis of women being equally satisfied working part-time or full-time, and we get p-values equal to 0.549, 0.484 and 0.363 for models (1), (2) and (3) respectively. We find that part-time work has no effect on job satisfaction for women and a negative and significant effect for men.

It is important to note that our results differ from the literature, which generally finds that women have greater satisfaction in part-time jobs. Certainly this finding has been regularly reported for developed countries (Booth & Van Ours, 2008). To the best of our knowledge, there is only one study for a developing country, Honduras, (López Bóo et al., 2010), and the authors report a negative effect of part-time work on job satisfaction for men and women. Even though the labour market characteristics between the two countries are very different (informality in Honduras is about 80% vs 17% for Chile), it is interesting that women are not better-off in part-time jobs in either developing country.¹⁹ These results should be considered when designing public policies oriented to increase the female labour participation through part-time work, especially in developing countries.

5.2 Part-time Work and Life Satisfaction

Now, we analyse how part-time work affects a different measure of well-being: life satisfaction. Analysing this dimension is an interesting way to evaluate the overall effect of being employed part-time. Interestingly, Booth and Van Ours (2008) found a positive relationship between part-time jobs and job satisfaction for women in the United Kingdom, but their results are puzzling because life satisfaction is unaffected by hours of work.

Again, the decision of included covariates is based on the international literature and data availability. The regressions control by indigenous ethnic group, female, age (and its square), schooling, dummies for health status (good health = 1), being married or divorced, children, being religious, a dummy variable indicating if a person is economically better-off than his or her reference group (this

Table 6. Determinants of job satisfaction (controlling by sample selection)

	(1)	(2)	(3)
Part-time	-0.4270** (0.1922)	-0.5596** (0.2524)	-1.3706** (0.6430)
Female and part-time	0.5202** (0.2430)	0.6970** (0.3152)	0.8200** (0.3120)
Female	-0.0172 (0.1080)	-0.0256 (0.1559)	0.0074 (0.1583)
Self-employment	0.0992 (0.0988)	0.1412 (0.1283)	0.1367 (0.1259)
Size of the firm: 2–5	0.1041 (0.1024)	0.1321 (0.1312)	0.1242 (0.1294)
Size of the firm: 6–9	0.3271** (0.1481)	0.4093** (0.1928)	0.4015** (0.1899)
Size of the firm: 10–49	0.1912 (0.1187)	0.2396 (0.1534)	0.2303 (0.1501)
Size of the firm: 50–199	0.1919 (0.1326)	0.2581 (0.1702)	0.2514 (0.1662)
Size of the firm: >200	0.2506* (0.1329)	0.3155* (0.1717)	0.3054* (0.1682)
Log(wage)	0.3522*** (0.0537)	0.4693*** (0.0786)	0.4653*** (0.0774)
Log(reference wage)	-0.1883* (0.1083)	-0.2071 (0.1443)	-0.2044 (0.1407)
Age	-0.0057 (0.0250)	-0.0102 (0.0338)	-0.0155 (0.0330)
Age squared	0.0001 (0.0002)	0.0002 (0.0003)	0.0002 (0.0003)
Tenure	-0.0017 (0.0039)	-0.0027 (0.0052)	-0.0024 (0.0051)
Schooling	0.0324** (0.0163)	0.0393* (0.0217)	0.0365* (0.0215)
Married	-0.0214 (0.0733)	-0.0262 (0.0950)	-0.0110 (0.0950)
Children	-0.1932** (0.0856)	-0.2645** (0.1158)	-0.2629** (0.1133)
Industry dummies	Yes	Yes	Yes
ρ_{12}	—	—	0.3838
ρ_{13}	0.0776	0.0748	0.0885
ρ_{23}	—	—	0.5347
c_1	—	2.1086	1.9003
c_2	—	3.1611	2.9339*
c_3	—	4.3343**	4.0823**
(Pseudo) R^2	0.1520	0.1553	0.1495
N	1,325	1,325	1,325

Notes: *10 per cent significance level; **5 per cent significance level; ***1 per cent significance level. (1) OLS (correcting for sample selection only); (2) ordered probit (correcting for sample selection only); (3) ordered probit (correcting for selection and endogeneity of the part-time work decision). ρ_{12} refers to the endogeneity of the model, ρ_{13} and ρ_{23} refer to the correction by bias selection. None of them was significant at 10 per cent. McFadden's R^2 are calculated for the three models. Standard deviations are in parenthesis. The sample includes both employed and unemployed individuals.

information is self-reported), and a dummy variable for part-time jobs (and its interaction with being female). Also, income (in log) and a freedom index are included as explanatory variables.²⁰ Geographical dummies were also incorporated.

In Table 7 we present three different models for life satisfaction. In column (1) we estimate the model by OLS, in column (2) we estimate an Ordered Probit, and in column (3) we correct for

Table 7. Part-time work and life satisfaction

	(1)	(2)	(3)
Part-time	-0.5469*** (0.1476)	-0.8960*** (0.2245)	-2.2213*** (0.4134)
Female and part-time	0.4593** (0.1844)	0.7598*** (0.2822)	0.9699*** (0.2752)
Female	-0.1556*** (0.0559)	-0.2588*** (0.0904)	-0.1559* (0.0898)
Indigenous	0.0160 (0.0947)	0.0260 (0.1547)	0.0312 (0.1462)
Age	-0.0425** (0.0182)	-0.0740** (0.0308)	-0.0755*** (0.0288)
Age squared	0.0004** (0.0002)	0.0008** (0.0003)	0.0007** (0.0003)
Schooling	0.0132* (0.0077)	0.0220* (0.0129)	0.0200 (0.0126)
Healthy	0.1667*** (0.0570)	0.2642*** (0.0915)	0.2415*** (0.0875)
Married	0.0586 (0.0635)	0.0979 (0.1028)	0.1258 (0.1003)
Divorced	-0.0556 (0.1133)	-0.0833 (0.1778)	-0.0559 (0.1702)
Children	-0.0269 (0.0648)	-0.0517 (0.1078)	-0.0672 (0.1017)
Religious	0.1780*** (0.0534)	0.2938*** (0.0859)	0.2751*** (0.0816)
Log(income)	0.1318*** (0.0360)	0.2287*** (0.0614)	0.2217*** (0.0585)
Better	-0.0398 (0.0562)	-0.0874 (0.0934)	-0.0833 (0.0877)
Freedom index	0.0710*** (0.0123)	0.1136*** (0.0196)	0.1069*** (0.0188)
Geographical dummies	Yes	Yes	Yes
ρ_{12}	—	—	0.6442**
ρ_{13}	—	—	—
ρ_{23}	—	—	—
c_1	—	0.4473	0.2284
c_2	—	1.7226	1.4474
c_3	—	3.2812**	2.9243**
(Pseudo) R^2	0.1943	0.0974	0.0975
N	821	821	821

Notes: *10 per cent significance level; **5 per cent significance level; ***1 per cent significance level. (1) OLS; (2) ordered probit (not considering endogeneity of the work decision); (3) ordered probit (considering endogeneity of the part-time work decision). ρ_{12} refers to the endogeneity of the model. Standard deviations are in parenthesis. The sample includes employed individuals.

endogeneity of the part-time decision. The excluded instruments are head of household and the industry dummies.

Having good health, income, freedom and being religious are important determinants of well-being and positively affect life satisfaction. However, being female has a negative and significant effect on subjective well-being, which is consistent with recent findings of a new gender gap emerging in the US, ‘one with higher subjective well-being for men’ (Stevenson & Wolfers, 2009, p.190).

Although part-time work has a negative effect on life satisfaction for men in all specifications, it does not have a significant effect for women in two of the three specifications. In effect, we perform a t-test for the null hypothesis that the sum of the coefficients (part-time and the interaction with being female) is equal to zero. We obtain p-values equal to 0.326, 0.317 and 0.002 for models (1), (2) and (3)

respectively. Thus, we accept the null hypothesis that women working part-time are as satisfied as those working full-time for models (1) and (2) and reject for model (3), which is the model that accounts the endogeneity of the decision to work part-time. As shown in Table 7, the coefficient ρ_{12} is significant at 5 per cent in column (3), meaning that those unobservables that affect life satisfaction are correlated with those affecting the decision to work part-time. In this case, the negative effect of working part-time on life satisfaction is significant for both men and women. These results are robust to the presence of selection bias as can be observed in Table 8.²¹

Our results for women may be puzzling in a different way, as in Booth and Van Ours (2008); part-time work does not affect women's job satisfaction, but it reduces their life satisfaction. One plausible

Table 8. Part-time work and life satisfaction (controlling by sample selection)

	(1)	(2)	(3)
Part-time	-0.5470*** (0.1452)	-0.8961*** (0.2244)	-2.2126*** (0.3702)
Female and part-time	0.4592** (0.1813)	0.7598*** (0.2821)	0.9304*** (0.2786)
Female	-0.1617* (0.0965)	-0.2594 (0.2023)	-0.1944 (0.1455)
Indigenous	0.0159 (0.0931)	0.0260 (0.1545)	0.0268 (0.1464)
Age	-0.0421** (0.0190)	-0.0740** (0.0339)	-0.0747** (0.0300)
Age squared	0.0004** (0.0002)	0.0008** (0.0003)	0.0007** (0.0003)
Schooling	0.0135 (0.0083)	0.0221 (0.0152)	0.0215 (0.0137)
Healthy	0.1667*** (0.0561)	0.2642*** (0.0915)	0.2423*** (0.0868)
Married	0.0579 (0.0632)	0.0978 (0.1051)	0.1177 (0.1010)
Divorced	-0.0547 (0.1124)	-0.0833 (0.1803)	-0.0465 (0.1727)
Children	-0.0267 (0.0638)	-0.0517 (0.1078)	-0.0659 (0.1013)
Religious	0.1779*** (0.0525)	0.2938*** (0.0858)	0.2765*** (0.0810)
Log(income)	0.1314*** (0.0361)	0.2287*** (0.0637)	0.2184*** (0.0598)
Better	-0.0398 (0.0554)	-0.0874 (0.0935)	-0.0785 (0.0874)
Freedom index	0.0710*** (0.0121)	0.1136*** (0.0196)	0.1068*** (0.0185)
Geographical dummies	Yes	Yes	Yes
ρ_{12}	—	—	0.6360**
ρ_{13}	-0.0139	0.0008	0.0625
ρ_{23}	—	—	0.4799**
c_1	—	0.4480	0.2268
c_2	—	1.7232	1.4420
c_3	—	3.2818**	2.9159**
(Pseudo) R^2	0.1678	0.1701	0.1619
N	1,325	1,325	1,325

Notes: *10 per cent significance level; **5 per cent significance level; ***1 per cent significance level. (1) OLS (correcting for sample selection only); (2) ordered probit (correcting for sample selection only); (3) ordered probit (correcting for selection and endogeneity of the part-time work decision). ρ_{12} refers to the endogeneity of the model, ρ_{13} and ρ_{23} refer to the correction by bias selection. Standard deviations are in parenthesis. The sample includes employed and unemployed individuals.

explanation is related to statistical power, since we have a reduced number of observations in the sample. Nonetheless, the conclusion is the same; in Chile women are not more satisfied with part-time jobs as those in developed countries.

At this point it is important to mention our findings on the relationship between part-time jobs and subjective well-being. Our estimates indicate a negative effect of working part-time in terms of life satisfaction for men, which may be due to these jobs' lower quality (Rau, 2010). In two of the three specifications this effect is not significant for women, which is consistent with the results found for job satisfaction. However, in the complete model that corrects for both endogeneity and selectivity, we do find a significant negative effect of part-time work on life satisfaction for women too. In any case, our findings differ from the international literature for developed countries. These findings complement the results reported on job satisfaction and add new information for the relationship between part-time work and life satisfaction for developing countries that, to the best of our knowledge, has not previously studied.

The estimates reveal that other variables affecting subjective well-being in Chile are generally consistent with available international evidence, including that for developed countries. For instance, schooling positively affects subjective well-being, although it is not statistically significant. Life satisfaction is U-shaped in age, as it is in many countries, reaching its minimum level at late 40s or early 50s depending on the econometric specification.

As in Frey and Stutzer (2000) we have found that the relationship between income and subjective well-being is significant, positive and concave. Consequently, there is a diminishing marginal utility with absolute income. The freedom index always exhibits positive and significant effects on life satisfaction. This result is consistent with Veenhoven (2000), who suggests that economic and political freedoms are positively related to subjective well-being. In our specifications good health is associated with higher subjective well-being (Kahneman & Deaton, 2010).

Another interesting result is the effect of being religious. Estimated models always reveal a significant effect of being religious on subjective well-being, as documented by Blanchflower and Oswald (2011). The importance of relative income in life satisfaction was evaluated using self-reported information by including a dummy variable equal to 1 if an individual is better-off than his reference group (Budria & Ferrer-i-Carbonell, 2012; Clark & Oswald, 1996; Ferrer-i-Carbonell, 2005; Newmark & Postlewaite, 1998). The coefficient was not significant. Nevertheless, this is an outstanding issue and must be analysed in future research.

6. Conclusions

Using new data from Chile we investigate the effects of part-time work on subjective well-being (job and life satisfaction). We provide unique evidence on the effects of part-time work on well-being for a middle-income developing country. Considering that most of the international evidence comes largely from developed countries, this provides interesting information on the relationship between job satisfaction and part-time work in an economy that shares some similarities with the developed world but still has a moderately informal labour market and high levels of wage inequality.

We estimate models for job and life satisfaction over a set of labour market variables, including part-time status and individual characteristics. We address the endogeneity and selectivity of the part-time work decision by estimating an ordered probit model with binary endogenous regressor for part-time status and bias selection simultaneously. This enhances the identification of the effect of part-time work on well-being.

Our estimates reveal a negative effect of part-time work on well-being (job satisfaction and life satisfaction) for men, which may be due to the lower quality of this type of employment, including informality and poorer working conditions. However, when looking at just women this effect is generally not significant. Women working part-time are as satisfied as those working full-time. This contrasts with the evidence reported for developed countries where women working part-time are more

satisfied than those working full-time. We think this is an important element to be taken into account when designing policies to increase female labour participation, especially in developing countries.

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Notes

1. López Bóo et al. (2010) take two approaches to separately address these issues. First, they estimate a probit model correcting for selection. Then, they follow an instrumental variable approach in order to correct the endogeneity of the part-time decision.
2. This reform (Law no 19.759) defines part-time work as not exceeding 30 hours per week. This definition is comparable to international standards.
3. The law states that in a part-time job, daily working hours must be continuous except for lunch, which makes this alternative unattractive to employers. For a more detailed discussion, see Rau (2010).
4. The *Encuesta Nacional de Empleo, Trabajo, Salud y Calidad de Vida de los Trabajadores y Trabajadoras en Chile (ENETS)* is a nationwide survey that contains information about working conditions, health and welfare.
5. The *Encuesta de Caracterización Socioeconómica Nacional (CASEN)* is a nationally representative cross-section survey that contains data on Chilean families regarding housing, education, health and employment. See the data section for more details.
6. Depending on the definition of part-time worker, the pay premium can reach 80 per cent.
7. The log-likelihood to maximise is:

$$l(\beta, \gamma, c) = \sum_{i=1}^n \sum_{j=1}^4 d_{ij} \ln(P(h_i = j | x, w))$$

where d_{ij} is equal to one if $h_i = j$ and equal to zero otherwise ($j = \{1, 2, 3, 4\}$).

8. See Chesher, Rosen, and Smolinski (2013) for alternative modelling strategies for discrete models with endogeneity.
9. See Cohen and Haberfeld (1991), and Korenman and Neumark (1991) for a discussion.
10. Alternatively, we could estimate separate models by gender to estimate the effect of part-time work; however, the low number of observations threaten the asymptotic properties of our estimators.
11. This approach consists of constructing the reference group using information on age, education and geographical zone. We create five categories of age: 18–25; 26–35; 36–45; 46–55; and 56–65 years old. Schooling is divided in six groups: no schooling or incomplete primary education; complete primary education; some secondary education; high school graduate; some college; and college graduate. Last, the geographical zone variable consists of three categories: north; central; and south. Thus, we have 87 cells (there was some empty cells) and calculate the average wage for each one. It should be mentioned that López Bóo et al. (2010) did not incorporate a variable like this. However, in our estimates this variable was not significant at 5 per cent.
12. Personality traits are typically assumed time-invariant (for example, see Van Praag, Frijters, and Ferrer-i-Carbonell [2003]; and Alem [2013]) and genetic factors that may affect satisfaction (Arvey, McCall, Bouchard, Taubman, & Cavanaugh, 1994) are determined at birth, so they should not be correlated with non-labour income or with head of household status. On the other hand, non-labour income is correlated with work hours according to the standard labour supply model. Last, head of household should be correlated with work hours, since in Chile household heads are generally the primary wage earners.
13. While in job satisfaction equations there is truncation in the dependent variable (and the part-time dummy and job satisfaction are observed only for those who decide to work), in life satisfaction equations the truncation occurs only in the independent variable, part-time dummy. However, the estimation method proceeds in the same way as in job satisfaction equations. See the Online Appendix for details.
14. The OPHI is a research institute within the University of Oxford's Department of International Development. Its aim is to build and promote a more systematic methodological and economic framework for reducing poverty grounded in Amartya Sen's capability approach. OPHI has identified and developed short modules to measure five missing dimensions of poverty:

- employment quality; empowerment or agency; physical safety; the ability to go about without shame; and psychological and subjective well-being.
15. Usually this variable is constructed by considering the information on whether the person professes to being religious and the degree of compliance (Blanchflower & Oswald, 2011). This is the approach we have followed in this study.
 16. Indeed, they argue in favour of testing on the structural coefficients. An alternative way to check the statistical significance of the partial effect would be to compute the standard errors of the partial effect by the so-called 'delta method'.
 17. We did that for each model. For models (1) and (3) we get a p-value equal to 0.553 and 0.556 respectively.
 18. We corrected for bias selection using the standard covariates. Parameters ρ_{13} and ρ_{23} stands for selectivity correction. We estimated these models using the Stata module CMP (Roodman, 2007). The log likelihood function of the model with endogeneity and selectivity correction is derived in the appendix.
 19. See Levy and Schady (2013) for more details about informality in Latin America and the Caribbean.
 20. The freedom index was constructed using the answers from the freedom of making decisions in the following areas: employment, health problems, household purchases, religion and crime prevention.
 21. Results for the auxiliary equations of the models (endogeneity and selection) are in the Online Appendix (Tables A1–A4).

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