

Does volunteer work pay off in the labor market?

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Abstract

Focusing on the investment motive for volunteer work, this paper examines whether volunteer work has an economic payoff upon the labor market in France. Using a switching regression model with endogenous switching, we find that in the public sector volunteers receive a positive wage premium that does not influence their involvement, while the premium is negative in the private sector. We also find little evidence of the presence of alternative types of returns on the labor market, such as employment mobility or entry into the labor market. Our findings are more consistent with a consumption motive and we suggest that volunteering is carried out with a relational purpose.

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1. Introduction

It is now well recognized that volunteer activities are quantitatively important in developed countries. The most recent evidence emanates from the Johns Hopkins Comparative Nonprofit Sector Project concerning 24 countries (Salamon and Sokolowski, 2001). According to this survey, the aggregate value of volunteer activities is usually greater than the aggregate value of financial contributions. In developed countries, this type of unremunerated work represents 8.0% of non-agricultural employment in Sweden, 5.2% in France, 4.9% in the United Kingdom and 4.6% in the United States. As an input, the supply of volunteer work is an economic resource that is a vital element in the functioning of the nonprofit sector, and it appreciably contributes to

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the collective well-being. Nevertheless, despite its significance, economists have so far mainly focused on money transfers rather than on time contributions.

Given the zero wage of volunteer labor, understanding why people get involved in such time-consuming activities is a matter of interest. In so doing, one could better predict the development of volunteer work supply with respect to its opportunity cost. It would be useful for nonprofit organizations to know how they may foster individual involvements and for the government how it may intervene to favor such contributions since they are socially desirable. To date, the economic literature on volunteer work has identified two rational motives for these time-related transfers: a consumption model and an investment model (see [Menchik and Weisbrod, 1987](#)). Knowing whether the volunteer motive is relevant from a consumption or an investment perspective is an empirical matter.

According to the consumption hypothesis, the supply of volunteer labor is a utility-bearing good. Hence, volunteer work is negatively related to its price (the individual after-tax wage rate) and positively related to the individual full income if it is a normal good. This model can be shaped in order to distinguish an altruistic motive ([Unger, 1991](#)), a public-goods motive ([Unger, 1985](#); [Schiff, 1990](#); [Duncan, 1999](#)), a private-goods motive ([Schiff, 1990](#)) or a mix of motives such as warm-glow altruism ([Andreoni et al., 1996](#)). Conversely, volunteer work follows an investment motive if it allows acquiring new skills or if it provides potentially valuable contacts or work experience which enhance future earnings perspectives and improve employability.

Given that both motives for volunteer activities lead to certain common predictions, it seems difficult to know which hypothesis is consistent with the data. In numerous surveys concerned with volunteer work, respondents regularly quote an investment motive. Among others, [Hall et al. \(2001\)](#) find that 23% of Canadian volunteers state they take up this activity to improve their chances of obtaining a job. In the United Kingdom, 59% of volunteers consider that their volunteer work provides an opportunity to learn new skills ([Davis Smith, 1998](#)). When focusing on previous econometric investigations about observed volunteer behavior rather than directly questioning individuals about their motives, it turns out that the investment model also receives some support.

[Mueller \(1975\)](#) finds that women who intend to seek a job in the future are more disposed towards volunteer activities.¹ [Menchik and Weisbrod \(1987\)](#) find that volunteer work follows a life-cycle pattern. The age profile, which first increases with age up to 43 years old and then decreases, is interpreted as a means of obtaining on-the-job experience, in accordance with an investment motive. [Carlin \(2001\)](#) suggests that among married women, volunteering can have a positive effect on one's career. Using a Canadian data set, [Day and Devlin \(1998\)](#) test whether volunteer work enhances individual earnings. The dummy variable which is equal to one when individuals provide time contributions is statistically significant in earnings equations, meaning that there exist pecuniary returns from volunteer work. On average, volunteer incomes are about 7% higher than those of non-volunteers and this premium is consistent with an investment model.

However, the interpretation of these previous tests dealing with the investment motive is questionable, and this is sometimes acknowledged by the authors themselves. [Menchik and Weisbrod \(1987, p. 177\)](#) point out that a peaked age profile with a peak in the early forties confirms the investment model, but that there is no explanation for such a delayed peak. The test conducted by [Day and Devlin \(1998\)](#) to determine whether volunteer work increases earnings is rather incon-

¹ However, [Schram and Dunsing \(1981\)](#) observe no similar relationship among married women between their supply of volunteer work and their expectations to work in one or five years.

clusive. Their dummy variable approach does not make it possible to infer any causal connection between a wage premium and volunteer participation. Indeed, earnings differential may result from an unobserved factor such as labor efficiency, which may also foster volunteer involvement since volunteering is a productive activity.² Volunteers are often employed persons with higher productivity (Freeman, 1997). In addition, the data used in previous studies are usually restricted to non-representative samples. For instance, in order to study individual earnings respectively for the United States and for Canada, Menchik and Weisbrod (1987) and Day and Devlin (1998) only account for individuals who are the sole wage earner in the household. Such selections are likely to affect empirical conclusions.

In this paper, we further examine the relevance of the investment motive for volunteer work by looking at whether volunteer work has an economic payoff upon the labor market. For our empirical analysis, we use a data set collected between 1998 and 1999 in France. Our attention is confined to volunteers who have certain responsibilities in their associations, since the investment motive is expected to particularly affect this type of time-consuming activities. Our empirical strategy is twofold. Firstly, we estimate whether there exists a wage differential between volunteers and non-volunteers using a switching regression model that provides adequate control for the selectivity bias. We also examine whether the premium influences the participation decision. Secondly, we investigate the presence of alternative types of returns on the labor market, such as employment mobility or entry/re-entry into the labor market. We also wonder whether our results are more consistent with a consumption motive.

The remainder of the paper is organized as follows. In Section 2, we describe the French data and document the magnitude of volunteer activities. The estimation strategy is described in Section 3, and we use a switching regression model with endogenous switching. In Section 4, we evaluate the magnitude of the volunteer premium and determine its effect on the volunteer membership decision. Section 5 further examines the relevance of both the consumption and investment hypotheses. Concluding comments are in Section 6.

2. The data

The data that we use in this paper comes from a French survey entitled 'Enquête Emploi du temps', collected by INSEE from February 1998 to February 1999. The purpose of this survey was to study how time is allocated within the family. It is based on a nationally representative sample of 8186 households. A first questionnaire gives information on family membership and it conveys many household characteristics such as income, residence, home appliances, and time-related aid received from third-parties. In a second questionnaire, members of these households over fifteen years of age are interviewed about their regular activities. Answers collected from 15,441 respondents make it possible to obtain accurate information pertaining to paid work, training, housework, leisure and help given to other households.

In the questionnaire, respondents are asked about their associative participation, which is an equivocal expression. There are many different ways of participating, but not all of them necessarily fit in with volunteer tasks.³ Fortunately, associative participation is detailed according

² Also, Segal (1993, p. 64) suggests a correlation in productivity across paid labor and volunteering, but emphasizes that this correlation in productivity cannot be interpreted in favor of an investment motive.

³ For instance, participation in recreational activities organized by the association without conducting additional activities cannot be seen as volunteering, it is merely leisure. On the contrary, allotting time for the book-keeping of an association is a type of participation which undoubtedly comprises volunteer labor.

to its extent, at least for the two associations which require more time for individuals. This allows us to distinguish among respondents between those who take on responsibilities (managers or board members) and other members.⁴ These managers are necessarily volunteers because French law requires persons in charge of their associations to refrain from any financial benefit. They may obtain no compensation other than the reimbursement of expenses. As a consequence, we only focus on volunteers who perform managerial tasks. We believe that the focus on this type of volunteer work is not too restrictive, since these activities are expected to be particularly attractive as an investment in human capital. As pointed out in Schiff (1990), volunteer leadership is an activity that includes more elements of job training than others.

The survey has several noticeable advantages. Firstly, it includes a large number of observations. Secondly, the data set provides many details about occupational activities, such as the number of weekly work hours, length of service in the firm, labor market experience and individual earnings. We have information about earnings for each worker of the sample, so that our analysis is not restricted to single-earner households as in Menchik and Weisbrod (1987) and Day and Devlin (1998). This is an important feature since in many households both husband and wife have paid jobs. Finally, while Day and Devlin (1998) have only a categorical variable for income, we know the distribution of individual earnings in the data set.⁵

Nevertheless, there are also some limitations. In particular, we are unaware of the number of hours individually volunteered since respondents were not asked about time spent during their participation. Also, there is no information on any past associative involvement of respondents, even if it is well established that current volunteers are more likely to have performed volunteer work in the past (Day and Devlin, 1998, p. 1186). In terms of the type of association, there is partial information available for the survey respondents since the survey distinguishes only four associative classes: parent teacher, sports and cultural, religious and humanitarian, union-related and political associations.

In our empirical analysis, we investigate the presence of a wage premium for a subsample comprising 6026 wage earners. Some descriptive statistics for this wage earners subsample are presented in Table 1. We have separated the private sector from the public sector because they represent two very different ‘worlds’ (Fournier, 2001). They differ from one another especially in the methods of recruitment, the salary formation procedures and promotion. In particular, wage rates are higher in the public sector (see Table 1). The gap is partly due to a composition effect, wage earners in the public sector being on average more skilled than those in the private sector.⁶ Separating these populations according to their educational levels and social status confirms this composition effect, principally owing to the importance of the teaching profession in the public sector. Also, we observe that women work more frequently in the public sector, while men are more numerous in private firms.

According to the data, the rate of volunteer participation is higher in the public sector than in the private sector. It averages 15.3% in the first case, whereas it only averages 10% in the

⁴ Items proposed to respondents are: “You assume responsibilities; you regularly participate in activities of the association; you irregularly participate in activities of the association; you are member without participating”.

⁵ For each individual, the data set indicates both the level of earnings and also the range of this income. In about two thirds of individuals, we know precisely the exact amount of income. For the last third, when the exact level was missing, the categorical information was used to generate a continuous value for income following the method of simulated residuals (see Gouriéroux et al., 1987).

⁶ Other things being equal, women and unskilled worker receive higher wages in the public sector in France. The opposite result is true for men with high educational levels (see Fournier, 2001).

Table 1
Descriptive statistics—wage earners

	Total wage earners		Public sector wage earners		Private sector wage earners	
	All	Volunteers	All	Volunteers	All	Volunteers
Sex						
Female	47.1	33.2	56.9	40.1	42.4	28.2
Male	52.9	66.8	43.1	59.9	57.6	71.8
Marital status						
In couple	75.4	80.3	76.1	80.9	75.1	79.9
Single	24.6	19.7	23.9	19.1	24.9	20.1
Age						
<30	19.8	11.3	12.7	7.7	23.2	14.0
30–40	29.2	28.4	26.1	21.1	30.8	33.8
40–50	32.4	40.6	39.2	47.8	29.1	35.3
>50	18.6	19.7	22.0	23.4	16.9	16.9
Number of children at home						
None	32.5	30.3	32.6	31.1	32.5	29.7
One	26.6	24.2	25.8	25.7	27.0	23.0
Two	27.5	30.7	28.5	30.8	27.0	30.6
Three or more	13.4	14.8	13.1	12.4	13.5	16.7
Education						
Primary school or less	20.1	12.4	14.3	7.4	23.0	16.2
Secondary school	39.6	37.9	34.2	31.4	42.2	42.7
Baccalaureate	14.1	14.3	15.1	16.0	13.6	13.0
Graduate studies	14.0	19.8	17.7	22.1	12.2	18.1
Postgraduate studies	12.2	15.6	18.7	23.1	9.0	10.0
Social status						
Executive	12.7	18.8	15.8	23.1	11.2	15.7
Intermediary	24.6	32.1	34.0	43.1	20.1	24.0
Employee	32.5	23.3	42.0	26.1	27.9	21.3
Worker	30.2	25.8	8.1	7.7	40.8	39.0
Hourly wage						
Under 40F	30.9	20.4	15.5	9.8	38.3	28.0
40F–60F	36.9	34.4	38.0	29.7	36.4	37.8
Above 60F	32.2	45.2	46.5	60.5	25.3	34.2
Size of town						
Under 2000 inhabitants	24.9	29.9	23.2	25.1	25.7	33.3
2000–20,000 inhabitants	16.7	17.8	15.8	18.7	17.1	17.2
20,000–100,000 inhabitants	12.7	11.3	13.6	12.4	12.2	10.5
Above 100,000 inhabitants	45.7	41.0	47.4	43.8	45.0	39.0
Lodging status						
Homeowner	58.9	68.3	63.3	71.9	56.8	65.7
Tenant	41.1	31.7	36.7	28.1	43.2	34.3
Number of observations	6026	707	1958	299	4068	408

Source: Survey INSEE Emploi du temps 1998–1999. Note: Hourly wages are exempt of social security charges.

second one. In both sectors, management volunteering is mainly a male activity. Volunteers are older, more often homeowners, and they are more likely to be married than other respondents. Individuals characterized by high wage rates are more frequently involved as volunteer managers than persons with lower wage rates. Many characteristics have similar effects on the participation decision in both sectors, but the magnitude of these effects is different in the private and public sectors. Living in very small towns enhances more volunteering in the private sector. Conversely, the impact of education and social status is more pronounced in the public sector.⁷ Finally, workers in the private sector are more inclined to volunteer when they have several children (at least two), but we do not observe this effect for public sector wage earners.

It seems important to note that our results are very close to the observation made by Freeman (1997), according to whom volunteers face a high time value. The positive correlation evidenced in Table 1 between high wages and participation in volunteering supports several explanations. One of them is that volunteer work may be seen as a human capital investment, but this conjecture deserves a more careful analysis.

3. Estimation strategy

To the best of our knowledge, the paper of Day and Devlin (1998) is the sole study to estimate a wage differential between volunteers and non-volunteers. These authors pool the two groups of workers and include in a wage equation a dummy variable which is equal to one when the respondent is a volunteer worker. Unfortunately, measuring a wage differential using the pooling method is likely to be misleading for at least two reasons.

Firstly, there may exist different wage profiles for volunteers and non-volunteers, which precludes pooling. Two wage equations should be estimated to account for specific returns for both types of workers. Secondly, there is a problem of self-selection into volunteer work, so that biased estimates for the wage equation are expected without adequate selectivity control. But the pooling approach poses an even more serious problem. Indeed, when testing the relevance of the investment motive, one has to determine (i) whether there exists an economic return for volunteer work and (ii) whether the wage differential really influences the volunteer decision. Clearly, if we cannot observe any economic payoff for volunteer work, it follows that rational workers have no incentive to participate in such activities. However, if one observes a volunteer premium, it may still be misleading to conclude that the investment motive applies. It would be the case if decisions to participate in volunteering do not depend on the wage premium.

A key feature here is that the pooling model raises the problem of logical consistency described in Heckman (1978) and Maddala (1983, pp. 117–125). When a latent variable and its realized qualitative variable are in the same model, some restrictions on the coefficients are needed for the model to be logically consistent.⁸ In the case of volunteer work, the consistency conditions under pooling are that (i) either volunteer activities do not imply any differential wage or (ii) the volunteer return does not affect the decision of volunteering. Thus, if we assume that pooling is allowed for volunteer and non-volunteer workers, the positive return for volunteer work observed

⁷ The higher the level of education, the greater is the propensity to volunteer, whereas the profile is less monotonic for workers in the private sector. The propensity to participate is more greatly enhanced among executive and intermediary occupations in the public sector.

⁸ In our context, the problem is to know whether the latent variable corresponding to volunteer work is affected by the wage differential, which depends itself on the binary decision to volunteer.

by Day and Devlin (1998) implies that this economic payoff plays no role in the volunteer’s choice, which is in contradiction with an investment motive.

In this paper, we provide a unified framework which accounts both for pooling and selectivity in order to estimate the volunteer premium and its effect on individual volunteer decisions. For our purpose, we use a switching regression model with endogenous switching (Lee, 1978; Lanfranchi et al., 2001). The model comprises two wage equations and a switching equation that determines the type of worker, either volunteer or non-volunteer. We briefly present the econometric model, which allows us to test whether it is possible to pool the data and whether volunteer work is the result of a wage differential rather than preferences.

For the presentation, let w_V and w_N be the wage rates respectively for volunteer and non-volunteer work, X a vector of wage determining variables, and ε_V and ε_N two random perturbations such that $\varepsilon_V \sim N(0, \sigma_V^2)$ and $\varepsilon_N \sim N(0, \sigma_N^2)$. The wage equations are:

$$w_V = \beta_V X + \varepsilon_V \tag{1}$$

$$w_N = \beta_N X + \varepsilon_N \tag{2}$$

We note that the data can be pooled only if the returns for the two types of workers are the same. If the condition $\beta_V = \beta_N$ does not hold, different wage equations are necessary. Concerning the volunteer decision, the choice equation is given by:

$$V^* = \gamma Z + \delta(w_V - w_N) + \varepsilon \tag{3}$$

where V^* is a latent variable for volunteer choice such that $V = 1$ if $V^* > 0$ ($V = 0$ otherwise), Z is a set of covariates which influences the volunteer’s decision, and ε is an error term such that $\varepsilon \sim N(0, \sigma_\varepsilon^2)$. We assume that $(\varepsilon_V, \varepsilon_N, \varepsilon) \sim N(0, \Sigma)$, where the covariance matrix Σ is:

$$\Sigma = \begin{bmatrix} \sigma_V^2 & \sigma_{\varepsilon_V \varepsilon_N} & \sigma_{\varepsilon_V \varepsilon} \\ & \sigma_N^2 & \sigma_{\varepsilon_N \varepsilon} \\ & & \sigma_\varepsilon^2 \end{bmatrix}$$

Not controlling for selectivity bias using OLS regressions for the wage equations leads to biased estimates unless $\text{cov}(\varepsilon_V, \varepsilon) = \text{cov}(\varepsilon_N, \varepsilon) = 0$. However, these restrictions are unlikely to hold and one rather expects that $\sigma_{\varepsilon_V \varepsilon} > 0$ and $\sigma_{\varepsilon_N \varepsilon} < 0$.⁹ Following Lee (1978), we estimate the switching regression model with endogenous switching using a two-stage method. If one substitutes the wage equations w_V and w_N into the choice equation V^* , the decision to volunteer can be estimated using a Probit model defined by:

$$V^* = \gamma Z + \delta(\beta_V - \beta_N)X + \delta(\varepsilon_V - \varepsilon_N) + \varepsilon \tag{4}$$

This reduced Probit equation can also be expressed as $V^* = \omega T + \eta$. Then, we compute the conditional expected wage equations $E(w_V | V = 1)$ and $E(w_N | V = 0)$:

$$E(w_V | V = 1) = \beta_V X + \sigma_{\varepsilon_V \varepsilon} \frac{\phi(\omega T)}{\Phi(\omega T)} \tag{5}$$

⁹ Let us consider a worker characterized by a high value for unobserved productivity. Thus, he receives a higher wage and the error term ε_V is positive. But because of the increased efficiency, the worker is also more likely to participate in volunteer work, so that $\varepsilon > 0$. In that case, the covariance between the residuals would be positive.

$$E(w_N | V = 0) = \beta_N X - \sigma_{\varepsilon_N \varepsilon} \frac{\phi(\omega T)}{1 - \Phi(\omega T)} \quad (6)$$

where $\phi(\omega T)$ and $\Phi(\omega T)$ are respectively the density function and the distribution function of a standard normal variable evaluated at ωT .

Thus, there are three steps in order to estimate the model. Firstly, after normalizing $\sigma_\eta^2 = 1$, we obtain a consistent estimate $\hat{\omega}$ using a standard Probit model. Then, using the previous information, we calculate the two selectivity terms $\sigma_{\varepsilon_V \varepsilon} \phi / \Phi$ and $-\sigma_{\varepsilon_N \varepsilon} \phi / (1 - \Phi)$ and obtain consistent estimates for the selection models using a two-step procedure. With the two step method, it is well known that one has to adjust the standard errors, so that we compute the corrected asymptotic covariance matrix following [Greene \(1981\)](#). Finally, we calculate the expected wage difference $\hat{w}_V - \hat{w}_N$ using the previous corrected wage equations, and this volunteer premium is used as an additional variable to estimate the structural switching Eq. (3). In so doing, we obtain a consistent estimate $\hat{\delta}$.¹⁰

Given the problem of logical consistency, it appears useful to test whether data can be pooled or not. To estimate Eqs. (1) and (2) using all observations on $w_{i,i=V,N}$, we know that $E(w) = E(w|V = 1)P(V = 1) + E(w|V = 0)P(V = 0)$, so that we obtain the following equation to test the pooling assumption ([Maddala, 1983, p. 227](#)):

$$E(w) = \beta_N X + (\beta_N - \beta_V) X \Phi(\omega T) + \phi(\omega T) (\sigma_{\varepsilon_V \varepsilon} - \sigma_{\varepsilon_N \varepsilon}) \quad (7)$$

Estimating (7) indicates the factors which have a different impact on wages for volunteer and non-volunteer workers. With the introduction of the interaction variables $X\Phi(\cdot)$ into the regression, a F -test is used to test whether the difference $(\beta_N - \beta_V)$ is significantly different from 0, in which case the pooling assumption can be rejected. In the latter case, the problem of logical consistency does not arise. So, estimating the structural Probit Eq. (3) and testing the hypothesis $\delta = 0$ allows us to know whether the volunteer wage differential exerts an impact on the volunteer decision, which is the essence of the investment motive.

4. Econometric analysis of the volunteer premium

We now turn to the econometric analysis of the French data following the previous empirical strategy. We assess whether there exists a wage premium for workers who manage an association and whether this premium affects the probability of volunteer membership. Given their specificities, we differentiate workers in the private and public sectors, so that we estimate two switching regression models with endogenous switching (one per sector).

The first step of our analysis is to estimate the reduced Probit Eq. (4) for volunteer membership decision, which includes both sets of variables X and Z (see [Table 2](#), columns 1 and 3). As the structural Eq. (3) is the one of interest, we omit the presentation of the first-stage estimates. We use the reduced form equations to control for sample selection in the wage equations for volunteer and non-volunteer workers. All the variables that enter the earnings equations have been previously included in the Probit equation, but there are two exceptions. Firstly, following [Van der Gaag and Vijverger \(1988\)](#), we do not use the age variable in the wage equations, but rely instead on an experience variable (and experience-squared). Secondly, concerning regional heterogeneity, we

¹⁰ Following [Lee \(1978, p. 423\)](#), we have assumed that the estimated wage gain was the exact exogenous variable, so that the covariance matrix for the Probit estimator can be estimated in the standard way.

Table 2
Decision for volunteer work—Probit models

Variables	Public sector				Private sector			
	(1) Reduced Probit		(2) Structural Probit		(3) Reduced Probit		(4) Structural Probit	
	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test
Constant	-3.814	-4.90	-3.611	-4.58	-3.870	-8.64	-3.683	-8.20
Female	-0.452	-5.92	-0.404	-4.08	-0.377	-5.46	-0.334	-4.48
Couple	0.022	0.23	-0.022	-0.19	-0.054	-0.73	-0.020	-0.26
Age	0.108	2.82	0.093	2.23	0.100	4.32	0.092	3.91
Age squared (10e-2)	-0.117	-2.53	-0.102	-2.08	-0.110	-3.81	-0.105	-3.63
Number of children	-0.015	-0.39	-0.017	-0.45	0.024	0.90	0.026	0.99
Good health	0.083	0.75			0.029	0.36		
Home ownership	0.132	1.54	0.136	1.60	0.061	0.95	0.069	1.07
Level of education								
No diploma	Ref.				Ref.			
Primary/secondary school	0.353	2.60	0.442	2.36	0.200	2.46	0.209	2.59
Baccalaureate	0.439	2.81	0.556	2.43	0.273	2.49	0.268	2.44
Graduate studies	0.431	2.63	0.497	2.61	0.559	4.87	0.608	5.24
Postgraduate studies	0.326	1.85	0.384	2.09	0.333	2.42	0.448	3.09
Social status								
Executive	0.285	1.55	0.274	1.48	0.134	1.18	0.175	1.53
Intermediary	0.216	1.38	0.240	1.50	0.024	0.29	0.022	0.26
Employee	-0.116	-0.80	-0.114	-0.79	0.086	1.00	0.034	0.38
Worker	Ref.		Ref.		Ref.		Ref.	
Plant size								
Less than 10 workers	Ref.				Ref.			
From 10 to 49 workers	-0.032	-0.25			-0.027	-0.34		
From 50 to 199 workers	-0.002	-0.01			-0.046	-0.54		
From 200 to 499 workers	0.019	0.13			0.001	0.01		
500 workers and more	-0.134	-1.01			0.213	2.37		
Size of town								
Under 2000 inhabitants	Ref.		Ref.		Ref.		Ref.	
2000–20,000 inhabitants	0.054	0.53	0.069	0.69	0.187	2.39	0.175	2.26
20,000–100,000 inhabitants	0.139	1.28	0.162	1.52	0.072	0.84	0.059	0.70
Above 100,000 inhabitants	-0.046	-0.39	-0.024	-0.20	-0.033	-0.33	-0.037	-0.37
Region								
Paris area	Ref.		Ref.		Ref.		Ref.	
Middle	-0.036	-0.27	0.007	0.05	0.229	2.18	0.279	2.52
North	0.078	0.45	0.134	0.74	0.001	0.01	0.048	0.33
East	0.233	1.66	0.273	1.86	0.238	2.12	0.292	2.50
West	0.257	1.99	0.300	2.12	0.411	3.87	0.453	4.04
South-west	0.161	1.18	0.204	1.39	0.299	2.57	0.353	2.90
Middle-east	0.114	0.79	0.167	1.11	0.332	3.16	0.380	3.42
Mediterranean	-0.170	-1.16	-0.132	-0.85	-0.038	-0.28	0.019	0.13
Wage premium			0.817	0.68			1.037	1.89
Number of observations	1958		1958		4068		4068	
Number of volunteers	299		299		408		408	
Chi squared (value;d.f.;probability)	(129.8;28;0.000)		(127.3;24;0.000)		(167.4;28;0.000)		(160.7;24;0.000)	
Log likelihood	-771.9		-773.2		-1241.4		-1244.7	

Source: Survey INSEE Emploi du Temps 1998–1999.

include only one dummy variable, which is equal to one when the person lives in Paris.¹¹ These results are reported in [Table 3](#), and we note that there are some differences between the public sector (columns 1 and 2) and the private sector (columns 4 and 5). Nevertheless, we assess both sets of regressions at the same time, since the different covariates often point in the same direction.

For the two subsamples (private and public), women are always characterized by a lower wage than men, but the marginal impact is more pronounced for women who take part in volunteer activities. Living with a spouse has a positive effect in the public sector, and also for volunteer workers in the private sector. Wages are higher for non-volunteer workers reporting good health in the public sector and for volunteer workers reporting good health in the private sector. Coefficients associated with educational variables are positive in the different regressions, and the marginal impact of education continuously increases as one considers higher levels of qualification.

The regression also includes a quadratic experience profile. In the different wage equations, the experience effects peak at a seniority comprised between 32 and 37 years old (depending on the sample). It means that the returns of experience increase throughout the careers of most of the workers. Individuals who work as executives and to a less extent as intermediaries receive higher earnings than those who hold a white or blue-collar position. Also, we note that the plant size exerts a positive effect on the hourly wage, with the exception of volunteer workers in the public sector, and that working in the Paris area always ensures higher wages. To summarize, wages are higher for those who are on the top of the social ladder, which is in accordance with expectations.

The different earnings equations, respectively for volunteer and non-volunteer workers, are then used to calculate the wage premium resulting from volunteer membership. The premium is computed by taking the difference between the predicted earnings corresponding to each type of workers, this procedure being conducted for both sectors. According to the data, we find a positive volunteer premium equal to 5.5% in the public sector, but the premium is negative and equal to -1.7% in the private sector. In both cases, the differences in hourly wages are insignificant at conventional levels, since the *t*-statistics for these two means are respectively equal to 0.70 and to -0.21. Our findings that one of the two premia is negative and that both premia are statistically insignificant provide little evidence in favor of the human capital motive.

Then, we turn to the structural Probit equation. These equations, respectively, estimated for the private and public sectors, include as an additional explanatory factor the estimated volunteer premium ([Table 2](#), columns 2 and 4).¹² Again, our results are not very different for both sectors, and we appraise both regressions at the same time.

We observe that the decision to volunteer is less likely for females. This negative impact is likely to reflect the greater propensity for women to implement domestic tasks, so that they have less available time for non-working activities. Living with a spouse and having children does not influence the decision of volunteer work. The age profile is important to assess the relevance of the investment motive. Younger persons should participate more in volunteer work if choices are driven by human capital considerations. For instance, [Menchik and Weisbrod \(1987\)](#) obtain a peaked age profile which is rather consistent with that motive, but they also note that a peak in the early forties casts doubt on this hypothesis. We find a similar age profile for volunteer work in France. We observe an inverted U-shaped profile, volunteering falling with age after around

¹¹ This means that some variables of the wage equations were excluded from the reduced form regressors. We have used these additional restrictions to avoid multicollinearity, as in [Van der Gaag and Vijvergerg \(1988\)](#). This does not imply further restrictions on the role of the wage premium in the structural Probit equation.

¹² In these structural Probit equations, we have excluded both the health status and the plant size.

Table 3
Log wage equations for volunteers and non-volunteers—sample selection models

Variables	Public sector						Private sector					
	(1) Volunteer work		(2) Not volunteer		(3) All workers		(4) Volunteer work		(5) Not volunteer		(6) All workers	
	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test
Constant	3.205	9.46	3.094	64.30	3.104	69.24	2.890	12.15	3.057	118.31	3.057	129.75
Female	−0.119	−1.95	−0.064	−2.66	−0.074	−3.74	−0.131	−2.77	−0.097	−6.17	−0.110	−8.11
Couple	0.100	2.03	0.047	2.59	0.055	3.25	−0.001	−0.02	0.033	2.46	0.032	2.58
Good health	0.024	0.40	0.050	2.25	0.045	2.17	0.089	2.07	0.015	1.03	0.022	1.60
Level of education												
No diploma	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
Primary/secondary school	0.003	0.04	0.108	4.16	0.100	4.22	0.111	2.40	0.119	7.69	0.124	8.86
Baccalaureate	0.112	1.18	0.249	7.69	0.235	8.11	0.214	3.51	0.200	9.33	0.210	10.91
Graduate studies	0.297	3.05	0.378	10.72	0.373	11.91	0.262	3.72	0.299	10.69	0.309	13.00
Postgraduate studies	0.598	6.01	0.633	17.10	0.640	19.15	0.429	5.71	0.506	17.65	0.510	19.96
Experience	0.041	4.55	0.033	10.93	0.034	12.60	0.039	5.94	0.033	15.76	0.034	18.61
Experience squared (10e-2)	−0.064	−3.15	−0.048	−6.96	−0.051	−7.96	−0.052	−3.56	−0.050	−10.33	−0.052	−11.85
Social status												
Executive	0.408	4.25	0.376	8.79	0.383	9.99	0.437	7.38	0.477	19.81	0.474	21.79
Intermediary	0.242	2.93	0.270	7.60	0.265	8.26	0.278	6.37	0.277	16.09	0.276	17.61
Employee	0.066	0.87	0.059	1.98	0.060	2.18	0.112	2.37	0.062	3.91	0.069	4.69
Worker	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
Plant size												
Less than 10 workers	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
From 10 to 49 workers	−0.009	−0.14	0.078	2.89	0.064	2.57	0.136	3.17	0.075	4.93	0.080	5.75
From 50 to 199 workers	0.037	0.57	0.117	4.30	0.104	4.14	0.126	2.73	0.109	6.73	0.110	7.40
From 200 to 499 workers	0.049	0.72	0.111	3.71	0.102	3.70	0.141	2.59	0.160	8.28	0.158	8.88
500 workers and more	0.032	0.49	0.087	3.23	0.080	3.22	0.280	5.70	0.183	9.28	0.201	11.38
Working in the Paris area	0.086	165	0.043	2.23	0.048	2.67	0.206	3.89	0.147	9.24	0.142	10.07
Volunteer work					0.141	1.04					0.108	0.89
Selection term	−0.018	−0.12	−0.106	−0.89	−0.078	−1.04	0.036	0.34	−0.186	−1.84	−0.053	−0.84
<i>F</i> -test (value;d.f.;d.f.;probability)			(1.936;17;1920;0.012)				(2.343;17;4030;0.001)					
Number of observations	299		1659		1958		408		3660		4068	
Residuals sum of squares	25.67		151.64		180.35		32.95		370.83		407.77	
<i>R</i> ²	0.610		0.576		0.586		0.582		0.547		0.551	

Source: Survey INSEE Emploi du Temps 1998–1999. Note: Standard errors for the sample selection models are corrected following Greene (1981).

46 years old in both sectors. Although a life-cycle pattern decreasing with age prompts a human capital explanation, the peak seems really too late for this motive.

A key variable for the volunteer decision is the level of qualification. We have included in the regression five dummy variables corresponding to the different educational levels. We note that in both sectors, the membership decision increases with these different levels. Again, a peaked profile is observed in both sectors, being over educated (postgraduate studies) reducing the participation rate. We note that the marginal effects associated to this variable are substantial. Conversely, occupational status does not really influence the membership decision. The regression also includes regional and local variables. While these covariates play no role in the public sector, volunteer membership occurs more frequently in small towns. There also exist some geographical differences. Living in the Paris area strongly reduces the decision to exert management responsibilities in an association, perhaps owing to the excessive time spent travelling in this urban area.

We finally discuss the effect of the wage premium. As shown in [Table 2](#), the probability of managing an association is positively related with the volunteer premium in the public sector, but this variable is not statistically significant in the regression. Conversely, in the private sector, the premium exerts a positive impact on the volunteer decision. We now have to interpret these results.

Firstly, in the public sector, the volunteer premium in France is of a similar order than the one found in Canada ([Day and Devlin, 1998](#)). Although a magnitude of 5–6% is substantial, the structural equation reveals that this premium does not influence the decision for volunteer membership, which contradicts a motive based on human capital considerations. The wage differential in the public sector may be explained by unobserved characteristics of the workers (such as productivity), so that volunteer workers would be more efficient than non-volunteer workers and hence would receive higher wages. Results are more puzzling in the private sector, where a negative premium positively affects the volunteer choice. Clearly, a negative premium indicates that volunteering has no economic payoff (at least on the hourly wage received). It also suggests that workers anticipate that they will suffer from a wage loss when managing an association, but that they consciously accept this fall in remuneration when they decide to volunteer, probably in exchange of other types of gratification.

The use of switching models with endogenous switching allows us to further analyze problems dealing with pooling, selectivity and logical consistency. We know that no problem of logical consistency occurs if the data cannot be pooled. To test the pooling hypothesis, we calculate the estimates for the treatment effect model ([Table 3](#), columns 3 and 6). When controlling for selectivity and pooling the data, the volunteer premium is overestimated to 14.1% in the public sector and to 10.8% in the private sector, but the dummy for volunteer work does not influence the wage level in both regressions. Using estimates from the switching model and from the treatment effect model, we calculate a *F*-ratio in order to test that the earnings equation coefficients are identical for volunteer and non-volunteer workers. The pooling hypothesis is rejected according to the data. This implies that the dummy variable approach is not relevant for our problem and that the problem of logical consistency does not arise with our data.¹³

¹³ We can also estimate Eq. (7) in order to find the explanatory variables whose impact differs for volunteer and non-volunteer workers. [Table A.1](#) (in [Appendix A](#)) reports the cross equation restrictions for each variable. In the public sector, experience and plant size have significantly lower impacts on wage for volunteer workers than for non-volunteer workers, while the opposite applies for health status. In the private sector, social status and plant size have a higher incidence on wages for volunteers, but women have lower wages when they exert managing responsibilities.

Table 3 suggests that the selectivity bias in the OLS estimates is not so important. In the public sector, both selection term coefficients are negative, but they are not statistically significant at conventional levels. The negative selection coefficient into volunteer work is rather surprising. In fact, workers who participate in such activities seem to prefer to lessen their commitments. Volunteer management is certainly perceived as an excessively time-consuming activity. This is consistent with our conclusion that the wage premium does not influence the volunteer's choice in the public sector. Conversely, in the private sector, there is no effect of self-selection of workers into volunteer work, but there is a positive selection for individuals who do not take part in volunteer activities. Concerning the signs of the selectivity terms, we find that a worker characterized by a high wage when not volunteering is more likely to refuse the management responsibilities of an association.

Since selectivity bias is not large when taking the endogeneity of volunteer choice into account, we have also estimated OLS models without selectivity correction (Table 4).¹⁴ We observe that the estimation results in this case are very similar to those from selectivity corrected models. Sex, education, experience and social status are significant explanatory variables for the hourly wage, both in the public and private sectors. However, not accounting for selectivity affects the magnitude of the volunteer premium. When calculating the difference in expected log-wage rates in both sectors, we obtain a premium equal to 0.38% in the public sector and to 1.4% in the private sector. These results are very similar to those found with the dummy variable approach (Table 4, columns 3 and 6), where the premia are respectively equal to 0.2% in the public sector and to 0.8% in the private sector. Yet again, the volunteer work dummy does not influence the worker's decision to volunteer.

Two additional comments are in order. Firstly, we are unable to further examine the intensity of involvement in volunteering. Indeed, volunteer work is simply measured as a binary variable in our study: there is no information on the number of hours spent volunteering. Although the data does record varying levels of participation, only managerial tasks fit in with volunteer activities. Respondents who report a regular participation in their association cannot be automatically classified as volunteer workers, they may for instance undertake only recreational activities (and they are certainly more likely to so).¹⁵ Secondly, it may be that the different types of associations have different human capital effects. Respondents with managerial responsibilities are more likely to do so in sports and cultural associations (67.2%), the other types being parent teacher (7.4%), religious and humanitarian (13%) and political associations (12.4%). Results from OLS models indicate that there are no differences for these four types of associations, human capital effects being very low and statistically insignificant.

So, our analysis points out that correcting for sample selection and endogeneity of the volunteer membership decision may have sizable effects when measuring whether management volunteering influences earnings. We find that there are no differences in hourly wages between volunteer and non-volunteer workers, and this allows us to reject an investment motive based on human capital and rising wage considerations.

¹⁴ It is well known that corrections for selectivity bias are highly sensitive to distributional assumptions, and especially to the specification of the switching equation.

¹⁵ Nevertheless, we have reestimated OLS models with two dummy variables, one for volunteer work and one for regular participation in associational activities. Again, we find that the corresponding estimates are of very low magnitude and we cannot reject the assumption that these coefficients are similar.

Table 4
Log wage equations for volunteers and non-volunteers—OLS models

Variables	Public sector						Private sector					
	(1) Volunteer work		(2) Not volunteer		(3) All workers		(4) Volunteer work		(5) Not volunteer		(6) All workers	
	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test
Constant	3.167	21.49	3.103	66.24	3.108	70.03	2.966	35.53	3.068	125.67	3.059	130.93
Female	-0.125	-3.06	-0.080	-4.94	-0.088	-5.88	-0.122	-3.01	-0.114	-9.26	-0.115	-9.78
Couple	0.102	2.05	0.048	2.72	0.057	3.40	0.001	0.01	0.033	2.56	0.032	2.59
Good health	0.026	0.45	0.053	2.43	0.048	2.36	0.086	2.00	0.017	1.15	0.023	1.65
Level of education												
No diploma	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
Primary/secondary school	0.008	0.10	0.117	4.94	0.107	4.76	0.107	2.35	0.128	9.03	0.126	9.36
Baccalaureate	0.118	1.36	0.262	9.08	0.245	9.01	0.209	3.46	0.213	10.81	0.214	11.45
Graduate studies	0.303	3.44	0.390	12.15	0.383	12.88	0.250	4.08	0.328	14.67	0.318	15.20
Postgraduate studies	0.603	6.34	0.642	18.27	0.647	19.92	0.424	5.66	0.523	19.75	0.515	20.66
Experience	0.042	5.04	0.034	12.90	0.036	14.06	0.038	6.53	0.035	19.95	0.035	20.95
Experience squared (10e-2)	-0.064	-3.33	-0.050	-7.79	-0.052	-8.60	-0.050	-3.69	-0.054	-12.42	-0.053	-12.89
Social status												
Executive	0.412	4.39	0.389	9.75	0.395	10.87	0.432	7.35	0.485	21.04	0.477	22.23
Intermediary	0.245	3.05	0.280	8.40	0.274	8.96	0.277	6.23	0.279	16.66	0.277	17.69
Employee	0.064	0.83	0.057	1.94	0.059	2.15	0.111	2.31	0.066	4.33	0.070	4.79
Worker	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
Plant size												
Less than 10 workers	Ref.		Ref.		Ref.		Ref.		Ref.		Ref.	
From 10 to 49 workers	-0.009	-0.14	0.077	2.89	0.063	2.55	0.136	3.10	0.073	4.99	0.080	5.73
From 50 to 199 workers	0.036	0.55	0.117	4.32	0.103	4.14	0.127	2.69	0.107	6.83	0.109	7.39
From 200 to 499 workers	0.049	0.70	0.113	3.80	0.102	3.75	0.141	2.55	0.160	8.50	0.158	8.89
500 workers and more	0.030	0.46	0.082	3.14	0.075	3.10	0.274	5.86	0.195	10.76	0.205	12.17
Working in the Paris area	0.084	1.65	0.039	2.09	0.044	2.53	0.216	4.75	0.133	9.86	0.138	10.67
Volunteer work (10e-2)					0.203	0.10					0.785	0.47
Number of observations		299		1659		1958		408		3660		4068
Residuals sum of squares		27.41		153.47		182.31		34.57		373.13		409.85
R ²		0.610		0.576		0.586		0.582		0.547		0.551

Source: Survey INSEE Emploi du Temps 1998–1999.

5. Investment motive versus consumption motive

5.1. *Alternative returns for volunteering in the labor market*

Higher wages do not seem to motivate workers to perform volunteer tasks, but a wage premium is not the only potential return for these activities. For instance, volunteering may also facilitate professional mobility for someone who wants to give up its current employment. We propose some tests of these alternative assumptions on three specific populations: wage earners, unemployed and women aged between 20 and 60, but now out-of-work.

First, wage earners are directly asked if they seek another employment. They are also asked if they are satisfied with hours devoted to their professional activities or if they would prefer to work more or less. Among them, 21.2% report a shortfall in actual hours and 6.7% report an excess. Clearly, these workers are more likely to search for a new job. Also, individuals who have a job on a fixed-term contract or a temporary job are in more precarious conditions than workers who have a job on a long-term contract. Since they are more exposed to unemployment, they are certainly prompted to search more secure employment. These different variables should positively influence the decision to volunteer under an investment motive (given the search for a new job), although those who prefer to work less may have less available time to volunteer. These explanatory factors are successively introduced in Probit equations on the volunteer choice, in addition to the explanatory variables used in the previous section.

Corresponding results are in Table 5.¹⁶ With regard to age, gender, level of education, the profiles of volunteers are similar to those highlighted in the previous section, but the impact of home ownership is now positive. Also, working in the public sector appears more favorable to volunteering than working in the private one. The probability of volunteering is not affected by household income, but it decreases when there are at least three earners in the family. Also, volunteer involvement is less likely as worked hours increase. Finally, we note that coefficients of variables representing the job-search aspects are very low and does not influence the volunteer decision. The hypothesis that volunteer managers are motivated by job-searching considerations is thus not borne out among the wage earners sample.

We now turn to a subsample of 890 unemployed persons. They are less inclined to volunteer than employed workers, the proportion of volunteer managers being equal to 5.4% (instead of 11.8% among wage earners). Given this low proportion, one expects a weak connection between intensity of job search and volunteering for the unemployed. Nevertheless, some jobless may become involved in volunteering if they consider these activities as a means to obtain on-the-job experience and to facilitate their search on the labor market. Since volunteer management tasks require a certain level of involvement to be properly fulfilled, we hypothesize that they will be more frequent among the most active unemployed jobseekers.

We have used several indicators measuring the propensity for a respondent to really find a job. First, they are asked if they have actively sought work during the three months before the time of survey. Second, they are asked about their search activities which might be appointments with employers, sending letters to firms, advertising situations wanted, sifting through situations

¹⁶ We also add household income, the number of earners in the family, the sector of activity (public or private) and the number of hours worked. The number of observations in these regressions is slightly smaller than the number used in the previous section because observations with missing household income were deleted. The regressions also control for commune and regional area of residence, but the coefficients are not presented here.

Table 5
Decision for volunteer work – wage earners – Probit model

Variables	(1)		(2)		(3)	
	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test
Constant	−3.244	−8.00	−3.240	−7.72	−3.193	−7.81
Female	−0.431	−8.19	−0.431	−8.20	−0.433	−8.20
Age	0.091	4.55	0.091	4.47	0.090	4.50
Age squared (10e-2)	−0.098	−4.00	−0.098	−3.94	−0.097	−3.96
In couple	−0.072	−1.06	−0.073	−1.07	−0.074	−1.08
Number of children	0.017	0.77	0.017	0.78	0.018	0.81
Number of household earners						
1	Ref.		Ref.		Ref.	
2	0.032	0.51	0.033	0.52	0.033	0.52
3 and above	−0.219	−1.97	−0.217	−1.95	−0.214	−1.92
Weekly payed hours	−0.006	−2.10	−0.006	−2.13	−0.007	−2.21
Level of education						
No diploma or primary school	Ref.		Ref.		Ref.	
Secondary school	0.249	3.58	0.249	3.57	0.248	3.56
Baccalaureate	0.335	3.75	0.336	3.76	0.335	3.74
Graduate studies	0.494	5.23	0.495	5.24	0.493	5.23
Postgraduate studies	0.346	3.23	0.344	3.22	0.342	3.19
Social status						
Executive	0.152	1.61	0.153	1.62	0.152	1.60
Intermediary	0.064	0.87	0.063	0.86	0.061	0.83
Employee	−0.025	−0.37	−0.025	−0.36	−0.025	−0.36
Worker	Ref.		Ref.		Ref.	
Public sector	0.182	3.60	0.179	3.57	0.178	3.54
Monthly household income						
Under 10,000 F	Ref.		Ref.		Ref.	
10,000–17,500 F	0.063	0.86	0.062	0.84	0.057	0.78
Above 17,500 F	0.077	0.85	0.075	0.83	0.067	0.73
Home ownership	0.105	1.97	0.105	1.96	0.104	1.95
Seeking another job	0.043	0.53				
Precarious job contract			0.012	0.16		
Opinion about one's working hours						
Sufficient number of hours					Ref.	Ref.
Not enough hours					−0.017	−0.28
Too many hours					0.037	0.43
Number of observations	5960		5960		5960	
Number of management volunteers	703		703		703	
Chi squared (value;d.f.;probability)	(302.5;30;0.000)		(302.2;30;0.000)		(302.5;31;0.000)	
Log likelihood	−2011.2		−2011.3		−2011.2	

Source: Survey INSEE Emploi du temps 1998–1999.

vacant published by ANPE,¹⁷ etc. Third, we know if they have held minor jobs of short duration since they got unemployed, these jobs providing work experience to maintain human capital and potentially valuable contacts. Econometric results (not reported) show that the coefficients of variables representing job-search aspects have the expected signs if volunteering is a means to search for remunerated work. However, they do not influence the volunteer decision.

Finally, we focus on non-student women, aged between 20 and 60, who are out-of-work at the time of the survey (859 observations). The volunteer participation rate for these women is 8.6% (respectively 8.3% for working women). Since the survey tells us whether they are seeking a job or not, we introduce a dummy for that variable into the volunteer decision equation. Again, we find that the corresponding coefficient is positive, as predicted if volunteering has human capital investment aspects, but this effect is not statistically significant. Other characteristics suggest that for housewives, this type of volunteering is fostered by belonging to fairly favored circles. We also observe a positive effect for the number of children, suggesting that some volunteer tasks may be children-oriented (whether they are educational or recreational activities). It is not clear that volunteering by housewives is a kind of investment in their human capital, but it might be an investment in the human capital of their children. Among these female volunteer managers, we find that 23% of them are involved in parent teacher associations while on the whole, only 6.5% of the volunteer managers choose the same kind of associations.

5.2. *Consumption motive and relational goods*

Since our results do not support the investment approach to explain time devoted to management tasks in France, it seems tempting to think that volunteer work is more in accordance with a consumption motive. However, the central problem is that these different models are difficult to distinguish since the consumption and investment motives share some common predictions. Let us examine more closely the consumption explanation.

In that case, it is well known that there is a difference between two main models which lies in what motivates contributors (Duncan, 1999). In the public goods model, the motivation for a contributor to give is due to the desire to increase the supply of the public good. Each agent is sensitive to the others' behavior, so that contributions crowd out each other out perfectly. Conversely, according to the private consumption model, this is the act of giving itself which explains charitable contributions and these transfers are always meaningful. However, assuming a psychological income owing to the act of giving itself seems not very satisfactory. As pointed out in Bardsley (2000), the warm glow motive tells us that some people just want to give their time, but it does not really explain why they want to give. Hence, the private motive may be seen as a trivial approach and it is not really testable: "the warm glow motive can be squared with just about any pattern of behavior by specifying an appropriate mix of instrumental and intrinsic motivation, and so does not yield any testable predictions" (Bardsley, 2000, p. 213).

Some results from the French data are not inconsistent with the consumption motive. For instance, volunteering has no effect on the wage level for both private and public sector workers, which is consistent with the consumption hypothesis (Table 3). Workers do not receive any wage benefits from volunteering, but they may be contributing just those numbers of hours to volunteering so far their work efforts are not negatively affected.¹⁸ Therefore, there is no

¹⁷ ANPE (Agence Nationale Pour l'Emploi) is a public agency designed to help jobless to find a work.

¹⁸ We are indebted to an anonymous referee for his detailed explanations on this point.

effect on their wage from their volunteer activities, but they are receiving psychic benefits from these activities. This motive could also explain why a negative wage premium actually increases the probability of volunteering, as one assumes the presence of non-monetary gratifications.

This possibility is further examined in the context of associational membership by Prouteau and Wolff (2004), who propose an alternative consumption model dealing with relational goods. It is well known that volunteering usually takes place in collective environments and is characterized by a relational dimension. In the private goods model, Clotfelter (1985) and Schiff (1990) have suggested several years ago that interactions with others were one of the motives for volunteer work, without formally testing this idea.

Although interpersonal contact are often seen as instrumental (meaning that they are not intrinsically valued), Kolm (2000) and Gui (2000) have recently suggested that relations matter for themselves and are objects of choice. These social aspects are embedded in the concept of relational goods, which may be defined as outputs of a communicative and affective nature produced through social interactions (see Uhlaner, 1989; Gui, 2000). Hence, they may be seen as local public goods, but their production and consumption are simultaneous and joint. Also, contributions to the production of relational goods depend on mutual agreements among individuals, which require some reciprocity within the collectivity. From an empirical viewpoint, two recent studies have shed some light on this hypothesis, at least for associational membership. In Norwegian, members of sport associations are more likely to attend the general meetings of these associations when they may find such relational goods (Enjolras, 2002). In France, the frequency of gatherings with friends is also higher for households whose at least one of its members takes part in associational activities (Prouteau and Wolff, 2004).

We now propose a test of this consumption motive using the French data. A difficult task is to construct an indicator of relational goods. Let us assume that individuals who undertake volunteer activities enjoy relational goods. If they make friends with other participants of the association, one can think that they will seek to meet them outside the association. In so doing, they can go on with these interactions that they appreciate. Hence, we use the following indicator of relational goods. We calculate the annual number of social gatherings for lunch or dinner with friends, which take place either at home or outside.¹⁹ Following our previous investigations, we examine this measure of “nutritional” sociability at the individual level, although gatherings have undoubtedly some public good aspects within the household. A problem with the data is that we have no information on the number of friends for each respondent, so that a given number of gatherings may refer to either a narrow network with dense relations or a large one with less frequent contacts.

Our aim is to know whether volunteer work influences the annual number of gatherings. For that purpose, we estimate a gatherings equation and include the volunteer decision in the set of explanatory variables.²⁰ As the frequency of zero values for annual gatherings is very low, we estimate a simple linear model using ordinary least squares, our endogenous variable being the logarithm of annual gatherings. In the sequel, we only examine the relationship between

¹⁹ On the relevance of this indicator of relational goods, see the further discussion in Prouteau and Wolff (2004). We use both inside and outside gatherings in order to account for reciprocity.

²⁰ We also introduce into the gatherings equation two variables that indicate whether there is a microwave or a dishwasher in the dwelling. These appliances are expected to facilitate invitations of friends to dinner. To control for privacy, we account for the number of rooms of the dwelling divided by the number of household members.

Table 6
Estimates of annual gatherings (log) with friends

Variables	OLS		2SLS	
	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test
Constant	0.413	1.06	0.530	1.32
Female	0.081	2.18	0.134	2.53
Age	0.022	1.69	0.011	0.73
Age squared (10e-2)	-0.058	-3.59	-0.046	-2.52
Living in couple	0.121	2.70	0.118	2.61
Number of children	-0.103	-5.25	-0.109	-5.36
Level of education				
No diploma	Ref.		Ref.	
Primary/secondary school	0.256	5.30	0.227	4.26
Baccalaureate	0.408	6.55	0.363	5.14
Graduate studies	0.567	8.67	0.493	5.83
Postgraduate studies	0.693	9.69	0.633	7.57
Income (log)	0.233	5.49	0.238	5.51
Home ownership	-0.209	-5.27	-0.221	-5.39
Number of persons per room	-0.089	-1.28	-0.061	-0.82
Dishwasher	0.232	5.94	0.219	5.36
Microwave	0.192	4.93	0.192	4.86
Volunteer work	0.268	5.06	0.979	1.96
Number of observations	5996		5996	
R^2	0.113		0.087	
Log likelihood	-10072.2		-10152.9	

Source: INSEE 1998–1999 Time Use survey.

volunteer work and our measure of relational goods. According to the estimates reported in Table 6, we find that individuals have more gatherings with friends when they exert some managerial responsibilities in associations. This suggests that there exists a relational benefit for such volunteer work.

Nevertheless, it could be argued that the decisions to volunteer and to meet some friends are part of a joint process. This would cast doubt on the exogeneity of the volunteer variable in the gatherings equation. A convenient way to account for this simultaneity is to treat the volunteer work decision as a continuous outcome. This choice may be expressed in terms of a latent variable, which is negative when an individual does not volunteer and positive otherwise. Then, we estimate the gatherings equation with endogenous volunteering using two stage least squares.²¹ The volunteer decision is instrumented using variables pertaining to gender, age, living in couple, number of children, education, number of worked hours, working in the private sector, income, home ownership and geographic indicators. We control for regional areas and also for the

²¹ Another way to control for this potential endogeneity is to rely on a more structural approach, as in Prouteau and Wolff (2004). Using a maximum likelihood method, these authors estimate a simultaneous equation model which comprises a Probit equation for the associational membership decision and a Tobit equation for annual gatherings. Volunteer work is an endogenous explanatory variable in the gatherings equation and the annual number of gatherings is an endogenous explanatory variable in the associational membership equation. The positive relationship between gatherings with friends and associational membership is highlighted with different econometric specifications (see the further discussion in Prouteau and Wolff, 2004).

size of town where respondents live, since these variables may be seen as proxies for the supply of public-provided services.

Our central result concerns the impact of the endogenous volunteer work decision. As shown in Table 6, we still find that the decision to take part in volunteer activities has a positive effect on the annual number of gatherings. We also note that the corresponding estimate is now higher than in the specification with exogenous volunteer work. Hence, these results indicate that there exists a substantial benefit in terms of relational goods for volunteer management tasks. Such an intrinsic benefit, which has been largely neglected in the previous literature on the motives for volunteer work, is in accordance with the consumption hypothesis.

6. Conclusion

Assuming that volunteering may be seen as a human capital investment that provides work experience and information regarding employment possibilities, we investigate in this paper whether voluntary management tasks have economic returns in the labor market. We focus on two types of benefits for volunteer work. Firstly, volunteer managers may receive an increase in their earnings (Day and Devlin, 1998). To control for the possible self-selection into volunteer work and given the problem of logical consistency, we estimate switching regression models with endogenous switching. Using a French data set, our empirical analysis indicates that in the public sector, volunteers receive a positive wage premium, but this does not influence their involvement. In the private sector, the premium is negative. Secondly, we wonder whether volunteers are motivated by a job-search motive. Among wage earners, the purpose of changing job does not foster volunteer participation.

Hence, our results do not support the human capital investment model of volunteering. Of course, it is certainly premature to close the door on this hypothesis. Firstly, separating each type of association would be useful, because some types may be more favorable to an investment motive. Secondly, we have considered only the propensity to participate, not the number of hours volunteered.²² Lastly, we only focus on volunteer management tasks, which involve more important elements of job training and contacts.²³ More accurate data is needed to further investigate these different points. However, the positive relationship between gatherings with friends and volunteer work shows that there exists an intrinsic benefit in terms of relational goods. Thus, our results suggest that a consumption motive is more appropriate when explaining the willingness to perform voluntary management tasks in France.

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²² The study of hours volunteered may give information more compatible with the investment motive. Van Dijk and Boin (1993) find that when participating, Dutch unemployed male job searchers spend relatively more time on volunteer work than working males. This outcome is interpreted by the authors in favor of the investment model.

²³ The decision to volunteer is not necessarily under the complete control of individuals. In France, associations often complain about a lack of volunteer managers, but it is doubtful that they are willing to recruit anyone. Certain seniority is probably required with the association one belongs to before becoming manager.

Appendix A

See Table A.1.

Table A.1
Log wage equations—pooling tests

Variables	Public sector				Private sector			
	Primary effects		Crossed effects		Primary effects		Crossed effects	
	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test	Coefficient	<i>t</i> -test
Constant	3.068	32.99	−0.034	−0.03	3.049	65.37	−3.517	−2.33
Female	−0.137	−2.75	0.434	1.41	−0.020	−0.67	−0.856	−2.71
Couple	0.058	1.87	0.017	0.09	0.026	1.15	0.054	0.24
Good health	−0.046	−1.18	0.666	2.68	−0.010	−0.40	0.345	1.50
Level of education								
No diploma	Ref.		Ref.		Ref.		Ref.	
Primary/secondary school	0.136	2.99	−0.291	−0.70	0.114	4.00	0.119	0.38
Baccalaureate	0.204	3.57	0.142	0.31	0.213	5.60	−0.023	−0.06
Graduate studies	0.258	3.82	0.525	1.09	0.253	4.77	0.440	0.94
Postgraduate studies	0.536	7.89	0.531	1.12	0.511	10.00	0.056	0.12
Experience	0.043	8.12	−0.087	−2.42	0.034	8.89	−0.009	−0.24
Experience squared (10e-2)	−0.075	−6.42	0.229	2.98	−0.054	−6.17	0.059	0.67
Social status								
Executive	0.402	4.50	−0.058	−0.12	0.299	6.70	1.232	3.89
Intermediary	0.280	3.85	−0.041	−0.10	0.228	7.04	0.433	1.68
Employee	0.066	1.11	−0.084	−0.21	0.026	0.97	0.346	1.31
Worker	Ref.		Ref.		Ref.		Ref.	
Plant size								
Less than 10 workers	Ref.		Ref.		Ref.		Ref.	
From 10 to 49 workers	0.122	2.63	−0.396	−1.47	0.039	1.47	0.482	1.88
From 50 to 199 workers	0.155	3.24	−0.409	−1.49	0.077	2.72	0.364	1.35
From 200 to 499 workers	0.210	3.96	−0.705	−2.41	0.085	2.44	0.772	2.46
500 workers and more	0.215	4.49	−0.904	−3.18	0.122	3.20	0.693	2.37
Working in the Paris area	0.083	2.39	−0.286	−1.21	0.140	5.22	0.224	0.73
Selectivity term	0.520	0.56			2.190	2.38		
Wald test: crossed effects = 0 (value;d.f.;probability)			(54.63;17;0.000)				(46.10; 17;0.000)	
Number of observations		1958				4068		
Residual sum of squares		177.18				404.95		
R ²		0.598				0.556		

Source: Survey INSEE Emploi du Temps 1998–1999.

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