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# The Labor Supply of Full-Time and Part-Time Pharmacists

Manuel J Carvajal,[1,*] and Ioana Popovici[1]

[1]Department of Socio Behavioral and Administrative Pharmacy, College of Pharmacy, Nova Southeastern University, Florida, USA

[*]*Corresponding author*: Manuel J Carvajal, Department of Socio Behavioral and Administrative Pharmacy, College of Pharmacy, Nova Southeastern University, Florida, USA. E-mail: cmanuel@nova.edu

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## Abstract

**Background:** In pharmacy, the bulk of part-time work is expected to be voluntary, that is, driven by workers' greater opportunity costs of non-work activities rather than by a scarcity of jobs. Involved in this process is a tradeoff of benefits and costs whereby the costs of reduced earnings from working fewer hours are exchanged for the benefits of more flexibility and non-work pursuits that yield greater utility than what might be derived from the consumption of goods and services purchased with the forgone earnings. Persons in different groups (i.e., gender, age, etc.) may react differently to the tradeoffs posed by a given job or set of work characteristics.

**Objectives:** Compare the labor supply functions of full-time and part-time pharmacists in south Florida in 2006 - 2007. The model depicted the amount of labor supplied in each category as determined by three types of explanatory variables.

**Patients and Methods:** This study was based on self-reported survey data collected in 2006 - 2007 from 1,478 licensed pharmacists who responded (26% response rate). The survey was sent to all 5,846 licensed pharmacists in the region. Using ordinary least squares from Stata 11 statistical software, a model estimated, separately for full-time and part-time practitioners, the average number of weekly hours worked as a function of the wage rate, human-capital stock, and job-related preferences. Levels of statistical significance were identified for $P < 0.01$, $P < 0.05$, and $P < 0.10$.

**Results:** The results suggested that, in configuring the number of hours worked, full-time practitioners were influenced significantly by the wage rate, gender, and location of worksite, but part-time practitioners did not respond to these covariates. They also revealed substantial differences in the magnitude and/or direction of response to the other covariates in the model by both employment-status groups.

**Conclusions:** These findings have relevant implications for researchers and administrators of the pharmacist workforce. Understanding employees' motivation to work full or part time may allow institutions to provide to them specific employment-status incentives and disincentives that enhance hiring, productivity, satisfaction, and retention practices.

*Keywords:* Employment, Health Occupations, Pharmacists, Salaries and Fringe Benefits

## 1. Background

Part-time employment is an intractable component of labor market analysis. Its existence is configured by opportunities and constraints of work environments as well as individual needs and preferences, a conglomerate of demand and supply factors influenced by technological, social, and demographic forces (1). On the labor demand side, employers offer part-time jobs because of potential productivity gains and the flexibility of this working arrangement to accommodate seasonal and cyclical peaks in consumer demand, provide services during non-standard hours, cover both expected and unexpected gaps in full-time workers' availability, and reduce operational costs by paying lower wage rates and fewer fringe benefits (2-6). On the labor supply side, part-time jobs enable employees to combine work with non-work activities in the pursuit of a more desirable balance between their careers and personal/family lives, and in many instances be able to work when the alternative is unemployment (7-11).

The nature and composition of part-time employment vary widely across labor markets and economic sectors (12). In pharmacy, where the demand for healthcare services is strong, the bulk of part-time work is expected to be voluntary, that is, driven by workers' greater opportunity costs of non-work activities rather than by a scarcity of jobs. Involved in this process is a tradeoff of benefits and costs whereby the costs of reduced earnings from working fewer hours are exchanged for the benefits of more flexibility and non-work pursuits that yield greater utility than what might be derived from the consumption of goods and services purchased with the forgone earnings (13).

Persons in different groups (i.e., gender, age, professional training, etc.) may react differently to the tradeoffs posed by a given job or set of work characteristics. While a worker may welcome a job opening as an opportunity to

earn a higher wage rate, another worker may not be interested if it requires working unconventional hours or generates too much stress. If full-time and part-time workers value job characteristics differently because of their dissimilar opportunity costs of non-work activities, different practices and interventions may be needed to manage the two groups (14-16). Along these lines Carvajal and Popovici (17) have found that in their jobs, part-time pharmacists are driven almost exclusively by pay, whereas full-time pharmacists exhibit a more comprehensive approach to their work experience that encompasses variables beyond wages and salaries.

## 2. Objectives

This study sought to compare the labor supply functions of full-time and part-time pharmacists in South Florida in 2006 - 2007. The model depicted the amount of labor supplied as determined by the wage rate, human-capital stock, and job-related preferences. Disparities in response were considered evidence of how practitioners in both employment-status groups differed in conditions under which they were willing and able to render their professional services. The analysis is especially suitable to the pharmacist workforce because, unlike other professions, remuneration is fairly linear with respect to work input; Goldin and Katz (18) have found no penalty for working shorter hours.

## 3. Patients and Methods

This study was based on self-reported survey data. Two employment-status groups were identified: full-time pharmacists, working an average of at least 36 hours per week, and part-time pharmacists, working, on average, fewer than 36 hours per week. This cutoff has been used in the literature repeatedly (17).

### 3.1. Data

Studies focusing on small regions tend to exhibit less stochastic disturbance than similar works using national or international data sets. In the latter, unmeasured variations in laws, tax rates, the cost of living, and labor market structures might be incorrectly interpreted as employment-status group disparities in labor supply when, in fact, they originate from unobserved characteristics. Or their effect may hide or blur the influence of variables identified in the model. In order to reduce stochastic disturbances, this study was conducted in South Florida, a relatively small area defined as the eight contiguous counties comprising the southern tip of the peninsula. It was based on primary data developed exclusively for purposes of this and similar papers.

According to a list provided by the Florida department of health, the eight counties were serviced in September 2006 by 5,846 licensed pharmacists. A survey questionnaire was mailed in October 2006, with a reminder sent in January 2007, to all of them. A total of 140 questionnaires were returned undelivered for various reasons, and 1,478 practitioners responded for a rate of 26%. The number of observations and the rate of response compared favorably with those reported by similar undertakings (19-23). Of these responses, 955 full-time pharmacists and 263 part-time pharmacists provided data for every variable included in the model developed below. The gender and age distributions in the data set were similar to the gender and age distributions of all practitioners in South Florida; thus, the sample seemed to be representative of the population from which it was drawn.

### 3.2. Statistical Model

Using ordinary least squares from Stata 11 statistical software, the model presented here estimated, separately for each employment-status classification, the average number of weekly hours worked as a function of the wage rate, human-capital stock, and job-related preferences, as follows:

$$H_{ij} = \alpha_i + W_{ijk}\beta_{ki} + X_{ijk}\lambda_{ki} + Z_{ijk}\theta_{ki+}u_{ij} \quad (1)$$

Where $H_{ij}$, was a vector of values of the average number of hours worked per week reported by the jth pharmacist of the ith employment-status group; $W_{ij}$, was a matrix of values (k = 2) of the linear and quadratic terms of the hourly wage rate, in dollars, reportedly earned by the jth pharmacist of the ith employment-status group; $X_{ijk}$, was a matrix of values of human-capital characteristics (k = 3) including gender, professional experience, and having completed a residency or holding a specialty board certification reported by the jth pharmacist of the ith employment-status group; $Z_{ijk}$, was a matrix of values of job-related characteristics (k = 3) including main role as a practitioner, location of worksite, and perception of amount of workload reported by the jth pharmacist of the ith employment-status group; $u_{ij}$, was a vector of normally and independently distributed stochastic disturbance terms, with mean zero and variance $\sigma_i^2$, pertaining to the jth pharmacist of the ith employment-status group; $\alpha$i, was the least-squares constant term estimated for the ith employment-status group; $\beta_{ki}$, $\lambda_{ki}$, and $\theta_{ki}$ were vectors of k parameters, one parameter per covariate (plus transformation, if any) within their respective matrix, being estimated for the ith employment-status group using ordinary least squares; and where i = 1 for full-time pharmacists and i = 2 for part-time pharmacists; j = 1,..., ni; and ni

was the number of pharmacists corresponding to the ith employment-status group ($n_1 = 955$ and $n_2 = 263$).

Both equations contained identical covariates for purposes of comparing the direction, magnitude, and statistical significance of the coefficients influencing the amount of labor supplied in the presence of all other covariates, thus avoiding disparities that might be attributed to the inclusion or omission of variables. An alternative model, in which the employment-status effect would have been identified by a dichotomous variable, was discarded because of suspected multicollinearity and its likely incorrect assumption that responses to covariates were equal for all pharmacists regardless of employment status (24, 25). Disparities in response, if they existed, were the kind of empirical evidence pursued by this article. Levels of statistical significance were identified for $P < 0.01$, $P < 0.05$, and $P < 0.10$.

Normally the wage rate is the main covariate of a pharmacist labor supply function (26, 27). In this model the wage rate appears with both linear and quadratic components to accommodate a possible backward bend in the labor supply function. According to conventional economic wisdom, a rise in the wage rate increases pharmacists' opportunity cost of leisure, which induces a substitution out of leisure time into labor time to take advantage of the higher wage rate, earn more income, and be able to consume more goods and services; this is known as the substitution effect and leads to a positive change in the number of hours worked. Since pharmacists need leisure to consume the additional goods and services purchased with higher levels of income, eventually they may decide to work fewer hours and still meet their consumption-leisure goals; this is the income effect, and it leads to an inverse change in the number of hours worked. Following this logic, the coefficient of the linear term was expected to be positive and the coefficient of the quadratic term was expected to be negative.

Three human-capital covariates were identified: gender, professional experience, and having completed a residency and/or holding a specialty board certification. Gender was measured with a dichotomous variable (a value of 1 for male, a value of 0 otherwise). Women usually work in the labor market fewer hours than men because they work more hours at home (28-31); part-time work provides a means of combining market production with childrearing, caregiving, and other domestic activities while maintaining, or even enhancing, professional skills (32). Recent evidence for South Florida pharmacists confirms that men work more hours than women, and this relationship is mediated by ethnic group and age: compared to female pharmacists in their respective ethnic categories, Non-Hispanic white men worked an average of 6.0 more hours, black men worked 2.1 more hours, and Hispanic men worked 3.9 more hours (33); similarly, compared to female pharmacists in their respective age groups, men under 40 years of age worked 3.7 more hours, 40 - 54 year-old men worked 5.0 more hours, and men 55 years or older worked 5.5 more hours (34). The least-squares coefficients for gender were expected to be positive.

Professional experience was defined as the number of years a practitioner has been a registered pharmacist. It is a proxy for age, and it is relevant because the importance of work relative to non-work activities changes over the life cycle (35). As pharmacists acquire more experience, part-time employees may exhibit mutations in their work patterns affecting leisure opportunity costs and how they respond, in terms of hours of work, to changes in the wage rate differently from the mutations exhibited by full-time employees.

The third human-capital covariate focused on additional training beyond licensure. It was measured with a dichotomous variable assigned a value of 1 if the practitioner had completed a residency and/or held a specialty board certification, a value of 0 otherwise. Having completed a residency and/or being board certified in a specialty field were interpreted as indications that a person possessed knowledge and skills in a defined area of practice beyond what would be expected from a generalist; the additional knowledge and skills were anticipated to increase pharmacists' commitment to work.

The other set of covariates explored in this article focused on job-related characteristics. They included main role as a practitioner, location of worksite, and perception of workload. They were compensating differentials (i.e., work conditions for which pharmacists trade off income). The first was a dichotomous variable (a value of 1 if the pharmacist's main role was dispensing medications, a value of 0 otherwise). Carvajal et al. (36) found that men and women whose main role was dispensing worked fewer hours than their peers whose main role as a pharmacist was not dispensing (i.e., clinical, administrative, etc.); thus, the coefficient of this covariate was anticipated to be negative.

Worksite location also was measured as a dichotomous variable. It was assigned a value of 1 if the worksite was located in a large city, a value of 0 otherwise. Insofar as large city jobs usually entail heavier vehicle traffic, more scarce parking, and other adverse accessibility conditions, pharmacists working in large cities were anticipated to work longer hours to compensate for the adverse conditions; a positive coefficient for this covariate was expected.

Practitioners' perception of a heavy workload is important in configuring a labor supply function because it may lead to more hours of work in an attempt to satisfy what is

demanded from the practitioner. It also is likely to generate more stress and symptoms of depression (8) and contribute to practitioners' withdrawal from the profession (37). Murphy et al. (38) report that it is a significant addition to their equations. This covariate was measured here using a zero-to-ten intensity scale, with ten denoting the heaviest workload perception. The hypothesis was that the effect of such perception on the number of hours worked was negative and was interpreted differently by full-time and part-time pharmacists.

### 3.3. Endogeneity Concerns

The use of ordinary least squares in the estimation of supply and/or demand equations often is challenged on the grounds of endogeneity, and more specifically, simultaneity bias. In this case, simultaneity would occur if the amount of labor supplied, the dependent variable, and the wage rate, one of the covariates, influenced each other simultaneously, which would lead to a correlation between the covariate and the stochastic disturbance term that would invalidate the unbiasedness property of ordinary least squares. The number of hours worked and the wage rate frequently are viewed as jointly determined because changes in either one may affect the other. This view, however, applies to standard market models, whereby the number of hours supplied, in equilibrium, is measured as a collective work effort throughout time. Accordingly, a change in the wage rate may motivate workers to supply more or fewer hours, which in turn may affect the wage rate and the number of hours worked, in equilibrium, at the next period.

The methodological scope of this article is different, oriented more along the path outlined by Carvajal et al. (36) and Mott (39). The behavior of individual pharmacists was examined, and the observations were drawn from cross-sectional data on characteristics of workers and their jobs. The wage rate was hypothesized to influence the amount of labor supplied, but labor supplied was not expected to affect appreciably the observed wage rate earned at the current job; if at all, the effect would be very small, and it would appear at a subsequent time period not covered by the model. Even if a bias appeared, it would be present in the equations of pharmacists from both employment-status classifications, so it would cancel out when the estimated coefficients for full-time and part-time pharmacists were compared for each covariate. In any event, to dispel all doubt, the correlation coefficients between the wage rate and the residuals for each equation were calculated and tested for statistical significance.

## 4. Results

### 4.1. Employment-Status Group Comparisons

The means and standard deviations of the amount of labor supplied by full-time and part-time pharmacists, and the variables postulated to influence it, are presented in Table 1. Significant differences were established using the t statistic with uneven number of observations. On average, full-time pharmacists earned a higher wage rate than part-time pharmacists. The gender composition was not significantly different between both groups, but full-time practitioners exhibited substantially less experience than their peers working fewer hours. They also showed a higher percentage of completing a residency and/or holding a specialty board certification.

Proportionately more pharmacists working under 36 hours per week reported dispensing medications as their main professional role. Compared to their part-time counterparts, a greater percentage of full-time pharmacists worked in a large city. Full-time pharmacists also reported a greater index of perceived workload.

### 4.2. Estimated Formula

The estimated least-squares coefficients, standard errors, and levels of significance of the covariates are presented in Table 2. The coefficients of every covariate were significant for at least one employment-status group, and the correlation coefficients between the wage rate and the residuals lacked significance ($P \leq 0.20$) for both groups, which lent credence to the contention that simultaneity was not present and, consequently, ordinary least squares was an appropriate estimation technique in this article. The F ratios were significant, and the adjusted $R^2$ values were similar for the two groups.

Both the linear and quadratic coefficients of hourly wage rate were significant for full-time practitioners, but they lacked significance for practitioners working part time. Full-time pharmacists exhibited a positive linear coefficient and a negative quadratic coefficient. The influence of this covariate was further examined with the estimation of labor supply elasticities (see Table 3). These elasticities measured, at the means of the variables, the percentage change in the quantity of labor supplied brought about by an infinitesimal percentage change in the covariate; specifically, the wage rate elasticity of labor supply for full-time pharmacists showed that a 10% rise in the hourly wage rate induced them to work 1.6% more hours per week.

The gender coefficient was significant for practitioners working at least 36 hours, but was not significant for their part-time peers; within the full-time employment-status group and considering the effect of all variables in the equation, men worked 1.6 more hours per week than

**Table 1.** Means and Standard Deviations (in Parentheses) of Variables Related to Work-Status Differences in Pharmacists' Labor Supply

| Variable | Full-Time Pharmacists | Part-Time Pharmacists |
|---|---|---|
| **Number of observations** | 955 | 263 |
| **Average workweek (hours) [H]** | 42.8[a] (6.3) | 23.7[a] (8.6) |
| **Wage rate (dollars per hour) [W]** | 50.3[a] (10.2) | 48.2[a] (7.7) |
| **Human capital variables [X]** | | |
| Gender: male (%) | 54.3 (49.8) | 49.4(50.1) |
| Professional experience (years) | 18.8[a] (13.3) | 31.1[a] (17.0) |
| Residency/specialty board certification (%) | 19.7[a] (39.8) | 12.2[a] (32.8) |
| **Job-preference variables [Z]** | | |
| Main role: dispensing medications (%) | 66.0[a] (47.4) | 80.2[a] (39.9) |
| Location: large city (%) | 57.3[b] (49.5) | 51.0[b] (50.1) |
| Perception of workload (0 - 10 scale) | 7.8[a] (1.6) | 7.3[a] (1.8) |

[a] Significantly different from each other ($P < 0.01$).
[b] Significantly different from each other ($P < 0.10$).

**Table 2.** Estimated Least-Squares Coefficients, their Standard Errors (in Parentheses) and (Two-Tail) Levels of Significance of Covariates in the Model

| Variable | Term | Full-Time Pharmacists (i = 1) | Part-Time Pharmacists (i = 2) |
|---|---|---|---|
| **Constant term** | $\alpha$ | 32.2253 | 21.1756 |
| **Wage rate** | $\beta_1$ | 0.18856[a] (0.05431) | 0.0638 (0.2359) |
| **Wage rate square** | $\beta_2$ | -0.0005[b] (0.0002) | 0.0002 (0.0017) |
| **Gender: male** | $\lambda_1$ | 1.6033[a] (0.4355) | 1.2302 (1.5232) |
| **Professional experience** | $\lambda_2$ | -0.0293[c] (0.0163) | -0.1203[a] (0.0459) |
| **Residency/specialty board certification** | $\lambda_3$ | 1.2467[b] (0.5157) | -3.6756[b] (1.6036) |
| **Main role: dispensing medications** | $\theta_1$ | -0.9830[b] (0.4411) | -2.5004[c] (1.3009) |
| **Location: large city** | $\theta_2$ | 1.0719[a] (0.4024) | 1.3037 (1.0195) |
| **Perception of workload** | $\theta_3$ | 0.2484[b] (0.1235) | 0.5343c (0.2890) |
| **F statistic** | | 8.76[a] | 3.76[a] |
| **Adjusted $R^2$** | | 0.061 | 0.078 |

[a] Statistically significant ($P < 0.01$).
[b] Statistically significant ($P < 0.05$).
[c] Statistically significant ($P < 0.10$).

**Table 3.** Labor Supply Elasticities, Calculated at the Means of the Variables, for Full-Time and Part-Time Pharmacists Derived From the Estimated Coefficients Shown in Table 2.

| Variable in the Formula | Full-Time Pharmacists (i = 1) | Part-Time Pharmacists (i = 2) |
|---|---|---|
| **Wage rate** | 0.159 | a[a] |
| **Experience** | -0.013 | -0.158 |

[a] Least-squares coefficient not statistically significant ($P \leq 0.20$).

women. The number of years of professional experience exerted a negative effect on the amount of labor supplied by pharmacists from both classifications. This covariate was inelastic, more so for full-time than part-time pharmacists. And whether or not pharmacists completed a residency and/or held a specialty board certification had opposite effects on the number of hours worked in both groups: positive for full-time pharmacists and negative for pharmacists who worked part time.

Both coefficients for the job-related preference covariate measuring work as primarily dispensing medications were negative; the adverse effect on the number of hours worked was over 2.5 times greater for part-time than full-time practitioners. Practicing in a large city induced pharmacists working at least 36 hours per week to work an additional 1.1 hours, but the effect on part-time pharmacists lacked significance. Finally, the influence of the perceived workload covariate was positive for both groups, and affected part-time pharmacists over twice as much as full-time pharmacists. Full-time and part-time respondents who scored a maximum of ten points in the scale of this covariate worked, on average, 2.5 and 5.3 more hours, respectively, than their peers scoring a minimum of zero.

## 5. Discussion

The absence of statistical significance of the hourly wage coefficients for practitioners working part time suggests that these pharmacists work a limited number of hours because of institutional reasons (i.e., household and caregiving responsibilities, greater preference for leisure, etc.) rather than in response to the wage rate. The significant, positive linear coefficient and negative quadratic coefficient estimated for full-time pharmacists are consistent with the existence of a backward bend in their labor sup-

ply function. As the wage rate rises, pharmacists working at least 36 hours per week work more hours but do so at a decreasing rate. The function reaches a peak at $188.56 per hour, far in excess of a reasonable wage rate for the data set. Consequently, the wage rate elasticity of labor supply is likely to remain positive.

Gender contributed to shape the amount of labor supplied (e.g., men working more hours than women) only within the full-time classification. This accords with the trend shown by male pharmacists to experience a progressively shorter workweek, that is, part-time employment, as they approach retirement, while female pharmacists express an increasing commitment to work later in life, after demands from childrearing ease off (40-42). It also might contribute to explain the greater negative professional experience labor supply elasticity value estimated for part-time vis-a-vis full-time pharmacists, as older men tend to undergo a gradual, phased retirement process rather than an abrupt cessation of professional activities (17). The evidence of an inverse relationship between practitioners' experience, ultimately a proxy for age, and the number of hours worked supported earlier findings reported by the health resources and services administration (26).

Opposite effects on the number of hours worked observed in both employment-status groups from the covariate measuring additional training beyond licensure, specifically, completing a residency and/or attaining a specialty board certification, shed some light on the influence of human capital on labor supply. For full-time pharmacists the influence was positive, suggesting that practitioners with a greater commitment or need to work pursued more returns on their human-capital investment in the form of higher wages and salaries resulting from added hours to their work schedule. Conversely, the influence was negative for part-time pharmacists. Perhaps some practitioners who completed a residency and/or specialty board certification, who might be earning relatively higher wage rates because of their additional training and skills, opted to work fewer hours in search of a better balance between their careers and personal/family lives; this would explain why the wage-rate coefficients lacked statistical significance for part-time pharmacists. The negative effect of the residency/certification covariate for part-time pharmacists was three times stronger than the positive effect for full-time pharmacists.

The more profound negative effect of primarily dispensing medications on the amount of labor supplied experienced by part-time (versus full-time) practitioners was consistent with the greater prevalence of dispensers in this employment-status group. Relatively more pharmacists with a primarily dispensing role seemingly chose to work less than 36 hours per week, and responded heavily to this covariate, because of the absence of pecuniary penalties for job flexibility in this work role within the profession (18).

The positive and statistically significant coefficient for full-time pharmacists working in large cities conformed to expectations. Apparently they work longer hours to compensate for heavier vehicle traffic, scarce parking, and other adverse conditions of urban work. The presumably adverse accessibility conditions of large cities, however, might not have had a significant impact on the amount of labor supplied by part-time pharmacists if these practitioners were driven by institutional factors in setting up their limited work schedules.

Finally, the coefficients for perception of workload did not behave as expected. Far from reducing the number of hours worked in response to the increased stress associated with a greater workload perception, practitioners in both employment-status groups reacted by increasing their amount of labor supplied. A reasonable explanation might be that pharmacists responded well to pressure and worked additional hours, when needed, out of professional commitment.

### 5.1. Limitations

The results of any study ought to be interpreted within the analytical setting of its methodology. In order to reduce stochastic disturbances and minimize the influence of variations in laws, tax rates, the cost of living, and labor market structures that might be incorrectly interpreted as employment-status group disparities in the amount of labor supplied, the data set was restricted to a relatively small area. This poses the first of several limitations: the findings may not be fully generalizable. The estimates obtained here were largely configured by conditions prevailing in South Florida, which is characterized by its diversity and other unique features.

Another limitation is that the survey providing the basis for this study was administered only once; thus it was not suitable to ascertain whether the effect of the covariates on the amount of labor supplied within each employment-status group fluctuates over time, or the extent to which such fluctuations are affected by the growing number of graduates from an expanding population of pharmacy schools throughout the nation. Furthermore, the study was conducted in 2006 and 2007, before the effect of the recent recession was felt by most pharmacists. Replicating the survey today might yield different results, especially in terms of willingness and ability to work additional hours. Besides more practitioners in the market, fewer new pharmacies and lower retirement dates than previously anticipated have contributed to a decline in the number of job vacancies since then.

A third limitation has to do with methodological reliance on self-reported data, which are subject to validity and reliability criticism. Although the questionnaire was tested before being mailed to survey participants, self-reported data are inherently biased. In addition, potential biases from measuring the variables in the model need be recognized (22, 43).

There is also the limitation of potential biases arising from the nature of covariates included here. Some of the labor supply determinants commonly identified in the literature were considered, but others might have been omitted. In an attempt to cope with this issue, five human-capital covariates were explored in earlier versions of the employment-status group equations. These variables were ethnic group, age, marital status, number of children in the household, and type of pharmacy degree earned. Similarly, the effect of three job-related variables (current-job tenure, type of practice setting, and whether a specific patient population was served) plus eleven perception variables (professional satisfaction, job satisfaction, stress, autonomy, availability of advancement opportunities, flexibility, job security, job atmosphere, fairness in the workplace, support from supervisor, and attitude toward coworkers) were considered. These covariates were eventually dropped because their coefficients failed to exhibit statistical significance ($P \leq 0.10$) for at least one employment-status group in the presence of the included covariates. Their influence on the amount of labor supplied was so feeble that neither the magnitude nor the level of significance of the included covariates changed appreciably when the others were deleted.

### 5.2. Conclusion

In spite of its limitations and methodological concerns, the study was successful in its attempt to compare the labor supply functions of full-time and part-time pharmacists. The empirical evidence revealed that in configuring the number of hours worked, full-time practitioners were influenced significantly by the wage rate, gender, and location of worksite, but part-time practitioners did not respond to these covariates. It also revealed substantial differences in the magnitude and/or direction of response to the other covariates in the model by both employment-status groups. Thus, it seems safe to conclude that full-time and part-time pharmacists' labor supply functions are heterogeneous.

These findings have relevant implications for researchers and administrators of the pharmacist workforce. Understanding employees' motivation to work full or part time, and how much of it, may allow institutions to provide to them specific employment-status incentives and disincentives that enhance their hiring, productivity, satisfaction, and retention practices. Future research should focus on human-capital and job-related preference indicators beyond those explored here, as well as the institutional forces that seem to govern part-time work in pharmacy.

## Footnotes

**Authors' Contribution:** Both authors contributed equally to the preparation of this article.

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