Predicting teacher absenteeism by personal background factors

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Abstract

Purpose – To examine the effects of specific personal and job characteristics on year-to-year (2000-2001) changes in teachers' frequency of absences.

Design/methodology/approach – With few exceptions, the population of elementary- and middle-school teachers in the Israeli public education system ($N = 51.916$) was studied. Hierarchical regression analysis was used.

Findings – Prior absenteeism, age, education, and supervisory position were found to be significant predictors of absenteeism frequency, accounting for about 50 percent of the variance in absence frequency.

Originality/value – This study focuses on relatively stable individual-difference predictors, including sociodemographic variables and work-related characteristics, which have been downplayed in the literature. These predictors can be measured more reliably and validly, compared to complex psychological constructs, and are relatively easy to interpret and implement by decision makers.

Keywords Absenteeism, Educational administration, Israel, Schools

Paper type Research paper

Absence behavior continues to attract researchers' attention (Steel, 2003) because of its prevalence among employees in many organizations. Absenteeism is "any failure of an employee to report for or to remain at work as scheduled, regardless of reason" (Cascio, 2003, p. 45). In some industries, reports show that employees were absent for about 10 percent of workdays (Harrison and Martocchio, 1998). The cost of absenteeism has been estimated in the US at $40 billion per year (Gaudine and Saks, 2001). Researchers' interest in absenteeism is in part due to the potentially important organizational and individual consequences of this behavior. As found in a meta-analysis (Bycio, 1992), absent employees often tend to be poor performers. Often, colleagues of absent employees are expected to substitute and fill in (Martocchio, 1994), thus becoming exposed to overload and other job-related stresses. Alternatively, external substitute personnel are recruited, increasing human resource costs. Absenteeism might reflect negative work norms, such as social loafing, and lead to demoralization. In a broader perspective, absenteeism can be viewed as part of withdrawal syndrome (Hulin, 1991; Johns, 2003), where employees react to undesirable working conditions by behaviors designed to distance themselves from work, including lateness and intent to leave.

In school education, absenteeism is perhaps more salient than in other workplaces. Studies in various countries show that teachers' absence rate, namely workdays lost due to absenteeism as a percentage of the potential workdays per year, was recorded as 2.85 percent in Canada (Schaefer, 2000), 4.8 percent in the USA (Jacobson, 1991), and 6-9 percent in Israel (Globerson and Ben-Yshai, 2002). The cost of absence replacement in the UK educational sector was estimated in 1999 at £300 million (Bowers, 2001).

In spite of obvious contextual differences and definitional and measurement issues that limit inter-country comparisons of absence data, there is wide consensus that teachers' absenteeism has detrimental consequences for the educational systems. Classes whose teachers do not report for work need to be canceled or taught by a substitute. Studies show that teacher absenteeism affects students' academic achievements (Woods and Montagno, 1997), and also student absenteeism (Ehrenberg *et al.*, 1989). Teachers are often viewed as behavioral models for their students, and a high absence rate may be perceived as lack of professional and ethical integrity. It is important, therefore, to understand and predict teachers' absence behavior. The present study focuses on prior absence behavior, personal characteristics, and occupational factors that predict frequency of absences among teachers.

Research on personal background predictors of absenteeism

The importance of background variables in explaining absenteeism was acknowledged with the appearance of Steers and Rhodes' (1978) model, which has since become one of the most influential and cited theoretical frameworks of absenteeism (Harrison and Martocchio, 1998). One of its strengths is its multi-variable approach, including psychological as well as personal characteristics. According to Steers and Rhodes (1978), demographic variables such as personal and family-related characteristics indirectly affect absenteeism, through the mediating effects of psychological constructs such as job satisfaction, motivation to be absent, and ability to attend work. Despite the rich research potential in this framework, it has not been subjected to comprehensive validating studies, but to studies relating to selected parts of the theory (Brooke, 1986).

Background variables are often used as control or mediating variables, designed to explain or restrict the associations between attitudinal variables and absenteeism (Rentsch and Steel, 1998; Zaccaro *et al.*, 1991). This approach reflects the assumption that demographic variables affect absence behavior primarily through employees' ability to attend work. Brooke (1986) summarized this approach, arguing that demographic variables do not provide enough explanation for absenteeism in comparison with theoretical constructs.

In this study we adopted Price's (1995) theoretical approach. Price (1995) argues that there are two reasons to study the direct effects of demographic variables on absence behavior. First, if any demographic variable is found to be causally related to absence behavior, research may proceed to examine the possible role of specific mediating variables in the direct effect thus uncovered. For example, if gender is related to absenteeism, it is likely that family-related or other pressures experienced by women or men can explain their absence behavior. Often the phenomena behind demographic categories are analogous to those measured by psychological and

sociological instruments. Therefore, one of the ways to exploit the potential of demographic variables is simply to include them in the model predicting absenteeism, and to infer from their explanatory power the theoretical constructs reflected by them, and their extent and importance. An additional reason for including demographic variables in absenteeism research is that they can be measured reliably and validly (Harrison and Martocchio, 1998). These attributes enable decision makers to interpret and implement results of studies based on background data more easily than studies based on complex attitudinal variables such as job commitment.

Recently Price's (1995) approach to background variables has gained support in Johns' (2003, p. 176) discussion of gender differences in absenteeism research. Like Price (1995), Johns (2003) argues that using gender as a control variable is becoming less defensible because of different dynamics underlying men's and women's absence behavior. Gender, therefore, should be used as a major predictor, and gender-related differences in the effects of other predictors on absence behavior should be systematically investigated.

Following Price's (1995) and Johns' (2003) line, the present study is focused on the contribution of background variables to the study of absenteeism. We used prior absence behavior as a control variable, so our hypotheses refer to the residual change in the predicted frequency of absences from the first school year investigated to the next (Cohen and Cohen, 1983). Therefore, in the following presentation including the formulations of our hypotheses, any reference to frequency of absenteeism should be construed to mean this residual change between the two consecutive years. A review of the literature on background variables, along with hypotheses generated from it, now follows.

Personal characteristics
Gender. In studying the relationship between gender and absenteeism, the typical expectation, as supported by the meta-analysis of Farrell and Stamm (1988) and by Steel and Rentsch (1995), is that women will be absent from work more than men. One reason is the traditional labor division in the family, according to which women have more than an equal share in child rearing and housework. The second reason is the typically lower status of women's employment, leading to a greater motivation to be absent (VandenHeuvel and Wooden, 1995). However, results pertaining to gender effect on absenteeism are not consistent. In their study of American teachers Scott and McClellan (1990) found that women tended to be absent more working days than men, but absence frequency was not different in the two genders. A contrasting result was reported by Globerson and Ben-Yshai (2002). They showed that male Israeli teachers were more absent than their female counterparts. Our first hypothesis follows Johns' (2003) conclusion that most absence behavior research does not support the "conventional wisdom" that women tend to be more absent than men.

H1. Male and female teachers' will not differ in their absence frequency.

Number of children. Studies on family commitments showed that factors such as the very existence of children, or their ages, were related to absenteeism. In an Australian study VandenHeuvel and Wooden (1995) reported that married parents tended to be absent, regardless of their gender. Children's age might also make a difference: in a

study in England, Bridges and Mumford (2001) found that mothers of children younger than two years tended to be absent more than men in the same situation, but this difference disappeared when the children were older. When children's age is held constant, the number of children in the family is related to absenteeism. Judge *et al.* (1997) showed that number of children positively affected absenteeism primarily because of family commitments such as children care-taking. In a review of the literature Muchinsky (1977) found that number of children was indeed positively related to absenteeism. Therefore,

> *H2.* The number of children in teachers' families is positively related to their absence frequency

Age. Most studies report a negative relationship between age and absenteeism among employees in general (Kristensen, 1991) and teachers in particular (Scott and Wimbush, 1991). In a meta-analysis of 34 studies, Martocchio (1989) found this negative relationship true for men but not for women, where no relationship was reported. Frequent reasons given for the inverse relationship between age and absenteeism are higher job commitment in older age, self-selection into a better person-organization fit, and age-related injury incidence (Martocchio, 1989). Age might interact with tenure. Hackett (1990) found that the negative relationship between age and absenteeism weakened when tenure was considered. Yet the basic inverse relationship between age and absenteeism seems to be conclusive, in the teaching profession in Israel also (Globerson and Ben-Yshai, 2002). In our design we controlled for gender and tenure in assessing the effects of age on changes in frequency of absenteeism.

> *H3.* Teachers' age is negatively related to their absence frequency.

Education. Little research has been done on the relationship between educational attainment and absenteeism. In a study where demographic variables were used as background to the relationship between job characteristics and absenteeism (Rentsch and Steel, 1998), education was found to contribute to lower absenteeism. In comparison, the contribution of age and seniority in this study was insignificant. Educational attainment may well elevate employees' professionalism, and consequently improve their level of responsibility and commitment to basic work values, such as attendance. This assumption is relevant to teaching, as well as to any other profession. Therefore, when all other factors are held constant,

> *H4.* The higher the educational attainment, the lower the absence frequency.

Occupational characteristics

Seniority. Findings on the connection between seniority and absenteeism have not been consistent. Past studies reported both a negative relationship of seniority with absenteeism (Price, 1995) and none at all (Kohler and Mathieu, 1993). In unionized workplaces the job security offered by strong union protection might lead to low cost of absenteeism for the individual. Still, Globerson and Ben-Yshai (2002) found that seniority was associated with lower absenteeism among Israeli (unionized) teachers. Hackett's (1990) findings about the impact of tenure (implying job security) on the

relationship between age and absenteeism (see above) show also that, unlike age, seniority might not be strongly related to absenteeism.

   H5.   There is no relationship between seniority and absence frequency.

Position level. In previous research this variable has been mostly related to decreased absenteeism: the higher the position the lower the absenteeism (Cooper and Bramwell, 1992; Johns, 1997). An Israeli study (Schwarzwald *et al.*, 1992) found that service employees increased their absenteeism as a result of failure to get a promotion, supporting the negative relationship mentioned above. Moreover, in a study on health-care workers, position level proved the strongest predictor in a long list of personal and occupational demographic variables (Goldberg and Waldman, 2000). One of the probable explanations for this relationship is the higher level of responsibility involved in administrative positions, leading to higher attendance on the job. Therefore,

   H6.   Teachers' position level is negatively associated with their absence frequency.

Salary. Studies show that higher-salaried employees tend to be less absent. For example, Winkelmann (1999) reported that salary of German employees was negatively associated with their absenteeism. The same relationship was reported by Globerson and Ben-Yshai (2002) in regard to Israeli teachers. Hackett (1990) showed that job satisfaction explained the relationship between salary level and absenteeism. Other results pertaining to other kinds of monetary rewards support the salary-absenteeism association, and show that the level of pay is a powerful predictor. For example, Jacobson (1988) showed that a pay incentive plan helped to decrease teachers' absenteeism. Another example is Brown's (1999) study, where elimination of overtime pay was reported to increase absenteeism (while a daily wage predicted a decrease in absenteeism). However, it is very likely that salary level is a proxy for other powerful predictors of absenteeism, such as education, seniority, job scope, and position level. These variables were not included in the studies cited above regarding the association between pay and teacher absenteeism. It is therefore expected that salary alone is not related to absence behavior. No hypothesis was generated.

Study site
The site of the study was the educational system in the State of Israel. The study is part of a report submitted to the Israel Ministry of Education by the authors, in response to a government call for the study of teacher absenteeism in Israel. The reason behind this call was growing concern about this negative trend among Israeli teachers in the public system (Globerson and Ben-Yshai, 2002). Other evidence of this concern is the recent yearly report (2003) of Israel's State Comptroller. In it the Comptroller asserts that teacher absenteeism is becoming a burden on schools, and leads, among other things, to the abuse of public resources. The timing of the present study (2000-2002) coincided with political unrest and resulting economic recession in Israel. These conditions provided an additional incentive to study absence behavior in order to contain the costs involved.

Methodology

Study sample

We included in the study teachers who taught in the 2000 and 2001 school years in the public elementary and middle schools ($N = 51,916$). Excluded were teachers who taught less than 30 percent or more than 160 percent of a full-time job, and teachers who actually worked less than six months in either of those school years. Also excluded were teachers who worked in the Jewish settlements located in the West Bank and Gaza Strip, where security conditions during those school years were very likely to have affected work attendance. We also excluded teachers who worked for extremely small schools (employing five teachers or less).

Measures

The source of the data was personnel files of the Israel Ministry of Education for the two school years 2000-2001 and 2001-2002. For the sake of anonymity, name and ID number were replaced by a randomly generated personal identification number. Data for these files were recorded at schools, and then sent to area districts, which in turn fed them to the central data processing office of the Ministry of Education. The reasons given for these absences corresponded to standard governmental categories. These are used to determine whether the absentee teachers are entitled to pay or not. As far as we know, there is no way to determine the reliability of the reasons given for absenteeism, and no formal attempt to verify the validity of doctors' notes, etc. Since most of the reasons given by teachers in the data used for this study were related to sickness (80 percent), reasons were not made part of this study, and all absences were uniformly treated, in accordance with Cascio's (2003) definition above. However, we excluded from our analysis absences due to maternity leave, military reserve duty, and strikes declared by a teachers' union, since these reasons normally represent highly involuntary causes of absenteeism and they accounted for only 1 percent of absence frequency.

Absence frequency. Absenteeism was measured by frequency (absence spells or incidents) and not by duration (time lost). A number of absenteeism researchers (Steel, 2003) consider spells as a measure of "voluntary" absenteeism. This observation is in line with the above-mentioned approach taken in the present study to focus on volitional causes of absence behavior. Moreover, absence spells have been found in previous studies to have more temporal stability than duration measures (Steel, 2003). Considering the large variety of temporal measures in absenteeism research, this attribute is important, allowing comparisons across studies. Studies on Israeli workers reported consistently that absence spells were a more reliable measure than time-lost measures (Melamed *et al.*, 1995; Westman and Etzion, 2001). It is noteworthy that absence spells and duration measures (total days lost per annum and total hours lost per annum) were highly correlated in this study: $r = 0.66$ and 0.67, respectively for its first and its second year.

As is typical in absenteeism research (Steel, 2003), in the present study distribution of the 276,164 absence spells that were analyzed departed from normality. They ranged between 0 and 45 incidents per person, with a mean of 5.31, standard deviation 4.42, median 4.00, skewness 1.68, and kurtosis 5.27. The values of 2 for skewness and 7 for kurtosis were suggested as cut-offs in determining substantial departures from normality (West *et al.*, 1995). Therefore in our analyses we used hierarchical multiple regression. Similarly to Steel's (2003) results, skewness and kurtosis values for the

time-lost measures were higher than those reported above, constituting an additional advantage of using absenteeism spells rather than duration.

The 2000-2001 and 2001-2002 absence frequency measures were both used in this study. The 2000-2001 measure was used in the statistical analysis as an independent control variable, so that the dependent variable was the change in absenteeism between the two years. The inclusion of this variable in the model is also supported by the assertion of Harrison and Price (2003, p. 206) that prior absenteeism constitutes "the best predictor of future absenteeism". Clearly, the previous-year absence measure is expected to reflect much of the variance in the preceding years' sociodemographic variables.

Gender was defined as male = 0, and educational attainment was measured by the dichotomy of having an academic degree = 1 and not having one = 0. Age and seniority were measured in years. Marital status was included in the analysis as a control variable.

School positions. Four key positions in school were considered: Principal (1,0), Deputy principal (1,0), Class coordinator (1,0), and Homeroom teacher (1,0). With the exception of the position of principal, these positions represented added administrative and pedagogical responsibilities, in addition to the teaching job. The position of principal involved the requirement to teach a minimum of six hours a week.

Salary. We measured salary by the total (i.e. pre-tax and pre-deduction) monthly salary in a representative month, that of March 2001, in New Israeli Shekels (NIS).

In addition, three variables representing three facets of workload were added as control variables: job scope – measured as a percentage of a full-time job, teaching load – measured as the weekly number of hours that the teacher was expected to teach given her or his job scope, and number of employing schools.

Statistical analysis
Following the recommendation of Snijders and Bosker (2000, p. 3), the statistical approach taken in this study was to view the two-year teachers' absence behavior as one sample within a string of a "population" of years. A conservative threshold of $p < 0.0001$ was set for tests of statistical significance. To test the cross-sample stability of the results obtained, we ran all analyses on two randomly drawn split-half sub-samples, and very similar results were obtained. Therefore, the results reported below relate to the total sample analyses.

Results
Data on means and standard deviations as well as the matrix of intercorrelations among all study variables are presented in Table I.

In Table I, it is seen that most of the predictors correlated significantly ($p < 0.0001$) with absenteeism in the 2000-2001 school year, except for marital status. The results also showed that the intercorrelations among the independent variables were mostly significant and very high in some cases (e.g. marital status with number of children, salary with positions of principal and deputy principal, teaching seniority with job scope).

To test the study hypotheses a hierarchical regression analysis was employed. Results are presented in Table II.

Table I.
Intercorrelations mean and standard deviations for the study variables, individual teacher level

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Mean	SD
1. Absence frequency, 2001	–															5.31	4.42
2. Absence frequency, 2000	0.69	–														5.44	4.52
3. Job scope (percent full timer)	0.03	0.02	–													94.03	21.48
4. Teaching load (annual hours)	0.19	0.18	0.42	–												726.78	240.83
5. Gender (female = 1)	-0.03	-0.07	-0.07	-0.05	–											0.83	0.37
6. Age	-0.21	-0.20	0.15	*0.00*	-0.05	–										40.23	9.15
7. Marital status (married = 1)	*0.01*	0.02	0.07	*0.00*	-0.01	0.13	–									0.84	0.37
8. Number of children	-0.03	*0.01*	0.15	0.06	-0.11	0.36	0.45	–								2.91	1.89
9. Educational attainment (academic = 1)	-0.03	*-0.01*	0.05	-0.12	0.02	-0.04	*0.01*	-0.05	–							0.68	0.46
10. Teaching seniority	-0.15	-0.14	0.25	0.07	-0.07	0.89	0.14	0.39	-0.05	–						16.33	9.38
11. Number of schools	-0.16	-0.14	*0.00*	-0.27	-0.04	0.04	-0.03	-0.02	*0.01*	0.02	–					1.10	0.38
12. Principal	-0.13	-0.10	0.34	0.38	-0.09	0.14	0.04	0.10	0.07	0.17	-0.04	–				0.03	0.17
13. Deputy principal	-0.09	-0.08	0.13	0.11	-0.04	0.10	0.03	0.06	0.03	0.11	-0.03	-0.02	–			0.03	0.16
14. Class coordinator	0.02	0.02	0.10	0.09	*-0.01*	0.03	0.04	0.06	*0.01*	0.11	0.07	-0.10	-0.06	–		0.26	0.44
15. Homeroom teacher	0.09	0.09	0.15	0.22	0.05	-0.06	0.04	0.05	-0.09	*0.01*	-0.18	-0.11	*0.01*	0.15	–	0.43	0.50
16. Salary, monthly	-0.14	-0.13	0.76	0.34	-0.14	0.56	0.10	0.28	0.15	0.65	0.02	0.51	0.22	0.10	*0.01*	7,268	2,973

Notes: $N = 51,916$. All correlation coefficients, excluding those in italics, were significant at $p < 0.0001$

Step	Variables	B	SEB	β	R^2	ΔR^2
1	Absence frequency	0.62*	0.003	0.64	0.47*	0.47*
2	Job scope	0.005*	0.001	0.02	0.49*	0.01*
	Teaching load, hours	0.002*	0.000	0.11		
	Gender	0.08	0.038	0.01		
	Age	−0.04*	0.003	−0.08		
	Marital status	0.12	0.04	0.01		
	Number of children	−0.006	0.009	−0.00		
	Education attainment	−0.38*	0.03	−0.04		
	Tenure in teaching	0.005	0.004	0.01		
	Number of schools	−0.005	0.04	0.00		
3	Principal	−2.75*	0.11	−0.10	0.49	0.01*
4	Deputy principal	−1.42*	0.09	−0.05	0.50	0.002*
5	Class coordinator	−0.16*	0.03	−0.02	0.50	0.001*
6	Homeroom teacher	−0.14*	0.03	−0.02	0.50	0.001*
7	Salary (monthly)	0.00	0.00	0.00	0.50	0.00

Notes: $*p < 0.0001$; $N = 51,916$. The symbols B and β represent the unstandardized and standardized partial for regression coefficients respectively, and SEB stands for the standard error of the former. The symbols R^2 and ΔR^2 stand for the squared and incremental multiple correlation coefficients, respectively, adjusted for degrees of freedom

Table II.
Hierarchical regression
analysis summary
predicting absence spells
in 2001

In the first step, prior absence rate (2000-2001) was entered. Results showed that prior absenteeism was a highly significant ($\beta = 0.64$, $p < 0.0001$) predictor of absenteeism. When entered alone this variable explained most of the variance in absence frequency (adjusted $R^2 = 0.475$). In a separate analysis we removed prior absenteeism as a predictor and found that all other predictors explained about 15 percent of the variance of the study's criterion, indicating that prior frequency of absence shared a considerable amount of variance with the other predictors.

After entering the control variables of job scope and teaching load, the following socio-demographic variables were added to the model: gender, age, marital status, number of children, educational attainment, and teaching seniority. The first two were significantly and positively related to absenteeism ($\beta = 0.02$, 0.11), as expected. Of the remainder, gender had no significant relationship to absenteeism, as hypothesized (H1). Marital status was not related to absenteeism either. Number of children was not related to absenteeism, contrary to H2. Age and educational attainment contributed significantly and negatively to frequency of absenteeism, supporting H3 and H4. Teaching seniority was not related to absenteeism, as hypothesized (H5). All variables in this model accounted for 49 percent of the absence variance, representing R^2 change of only 0.013 ($p < 0.0001$) in the predictive power of previously entered predictors.

The four administrative positions measured were introduced hierarchically, at the third through the sixth stage of the regression analysis. Results showed that each of these four positions contributed significantly and in the expected direction to absenteeism ($\beta = -0.10$, -0.05, -0.02, -0.02, respectively, $p < 0.0001$), thus fully supporting H6. Their marginal contribution to the explained variance, though, was relatively small (ΔR^2 range of about 0.01).

Finally, salary was entered last into the regression, but had no explanatory power beyond the predictors preceding it, as expected.

To summarize, all the study hypotheses were supported, except for that pertaining to the number of children (no significant relationship, as opposed to the significant and positive one hypothesized). Results showed that teachers who tended to be frequently absent were those who worked longer hours, were younger in age, less educated, and less likely to hold a school administrative position in addition to teaching.

Discussion

The purpose of the study was to predict frequency of teacher absenteeism on the elementary- and middle-school levels in Israel by personal characteristics and job features. The significance of this study lies in its focus on relatively stable individual difference variables, including sociodemographic variables and work-related characteristics, which have been downplayed in the literature. In addition, it investigated the role of these predictors in forecasting year-to-year changes in the frequency of absences in a fairly large sample of teachers. The study findings attest to the contribution of each of these background factors to the explanation of absenteeism while controlling for the effects of other predictors, and they do so with reference to the change in frequency of absences from the first year of our study to the next.

Frequency of absenteeism in the preceding year explained most (47 percent out of 50 percent) of the variance of the criterion. This finding is in accord with others reported in the literature. For example, in a meta-analysis on the correlates of absenteeism, Farrell and Stamm (1988) reported that the corrected mean correlation coefficient between prior absenteeism and present absenteeism over ten studies was $r = 0.71$. Breaugh (1981) reported that prior absenteeism was a stronger predictor of absenteeism than attitudes to work. Researchers such as Keller (1983) and Zaccaro *et al.* (1991) reported analogous findings.

The high explanatory power of prior absenteeism might be partially attributed to a shared experience of absentee culture (Rentsch and Steel, 2003). Teachers tend to adopt environmental norms regarding absenteeism, thus exhibiting similar behaviors. Another possible reason for the influence of prior absenteeism is the fact that many of the common causes for absenteeism (chronic illness or illness proneness, illness of family member: see Michie and Williams, 2003) are likely to linger from one year to the next. Similarly, sociodemographic factors (e.g. job scope, position level, age, education) that are likely to affect absenteeism are also relatively stable over years. Still, as Johns (2003) suggests, the stability of absenteeism over time cannot be taken for granted. A variety of random effects make it necessary continuously to evaluate employees' tendencies and behavioral patterns.

As expected, job scope and teaching load – two control variables – were found to contribute significantly to the explanation of absenteeism. Assuming that these two control variables gauge objective workload, this finding suggests that structural features of the job, namely number of work hours, is a potent explanatory factor of changes in absence behavior from year to year.

In contrast to job scope and teaching load, the variable representing number of employing schools has not been associated with absenteeism. Teachers who work for more than one school are usually part-timers at all of these employing schools. Literature on part-time employment indeed shows that no clear association exists between part-time work and absenteeism (Barling and Gallagher, 1996). In a study conducted in the Netherlands, Smulders (1993) maintained that part-time employees are exposed to both

"absence reducing" and "absence inducing" forces. An example of an absence-reducing force in part-time teaching would be the privilege of spending less time on the school premises, implying less physical and administrative constraints. An absence-inducing force might be the association of part-time teaching with a relatively peripheral position in the school. Such contrasting effects might explain the lack of a linear relationship between absenteeism and being employed by more than one school.

Most of the hypotheses related to the sociodemographic variables represented by personal background factors were supported. No association was found between absenteeism and gender. The number of children in the family was not associated with absenteeism either, but this finding was contrary to the relationship hypothesized. One of the possible explanations for it is that the ages, not the number of children have a significant effect on absence behavior. For example, Bridges and Mumford (2001) showed that the younger the children, the higher the likelihood of absenteeism. Possibly, care-taking arrangements for children are easier to obtain at younger and older ages than at ages in between. Another possible explanation is that care-taking is not dependent so much on the number of children as on factors such as motivation, financial means, and responsibilities of older siblings.

The personal variables found most conducive to absenteeism behavior were age and education: teachers who were more absent tended to be younger and less educated. The exact dynamics behind age needs to be further explored. Burton *et al.*(2002) in their study on customer service employees showed that age acted as a suppressor on the relationship between motivation to attend and overall absenteeism. Excluding age from absenteeism analyses limited the predictive ability of motivation to attend.

While the results pertaining to age corroborate previous findings in literature, those pertaining to education need to be supported by extrapolation of research results in other areas. In a study on work values, Harpaz (1988) reported that education was related to intrinsic and not to extrinsic work values, and that the work attitudes of lower-educated workers were more instrumental than those of higher-educated workers. Although these findings do not explain absence behavior per se, they might suggest that when work is perceived by educated employees as intrinsically rewarding, such as presumably is the case of teaching, there is a higher likelihood that the more educated teachers are, the more they incline to attend.

Among the occupational background variables, teaching seniority did not contribute significantly to absenteeism, as hypothesized. As expected, salary, entered last, did not contribute to absenteeism either.

Perhaps the most striking results of the current study are those pertaining to school positions. All four positions considered – principal, deputy-principal, class coordinator, and homeroom teacher – were significantly related to absenteeism, as hypothesized. These positions reflect both administrative and pedagogical responsibilities, as well as extra duties. Given the design of the current study, it is likely that holding school positions (measured in 2000-2001) indeed led to decreased absenteeism (measured in 2001-2002). It may be argued that the teachers were nominated or selected for school positions in part due to their superior attendance record. However, since we controlled for past absence frequency in our analysis, this argument appears less relevant to our study.

According to Hackman and Oldham's (1980) job design framework, these positions are likely to be better designed than those of teachers with no extra school positions, in

all five core job characteristics: skill variety, autonomy, feedback, job significance, and task identity. Research shows that improved job design is related to decreased absenteeism (Fried and Ferris, 1987; Rentsch and Steel, 1998), supporting the findings in the present study.

Karasek's (1979) theory of job decision latitude also supports the findings related to school positions. According to this theory, the interaction of job demands and job decision latitude affects job strain, which, in turn, affects work outcomes such as absenteeism. An empirical study testing this theory (Dwyer and Ganster, 1991) showed that the interaction between high control perception and high work demands led to lower absenteeism among manufacturing employees. It is very likely that in the case of teachers holding school positions, where both work demands and actual control are high, lower absenteeism of those position holders might be expected.

Finally, it is important to note that the strength of the data employed in this study might be also the source of potential limitation. Government records provide a wealth of "hard data", yet these originate from individual reports in the field. We were unable to check data reliability or detect either individual or school biases in reporting the data to central offices. Such biases might be the case specifically in regard to position-holder absenteeism. Goldberg and Waldman (2000) reported that in their study position level was negatively related to record-based absenteeism and not to self-report absenteeism. These authors suggest that the reason may be stricter record-keeping procedures for lower-level employees than for higher-level ones.

Another limitation of this study is the fact that data of only two consecutive years were considered. We recommend replication of this study applying a longitudinal design, where data over a number of years are used. Such a design will strengthen the study conclusions, and also take into account natural changes in teachers' background characteristics such as change in position, marital status, etc. Also, the fact that only 50 percent of the variance was explained by the study variables over the two years suggests that other factors might play a role in absenteeism. The finding in regard to the strong effect of position level intimates the possibility that school-level variables, such as leadership style and hierarchy level, might play a role in explaining absence behavior. Other possible school-level variables are size, education level, and attendance policy. It is strongly recommended that these and other organization-level variables be explored in multi-level designs, involving both individual and organization levels of analysis.

To summarize, this study focused on the contribution of personal background variables to change in absence behavior. Results showed that when prior absenteeism and workload were controlled, the variables most conducive to absence behavior were age, education, and position level. These findings largely agree with previous research, while highlighting the importance of background variables, in line with Price's (1995) and Johns's (2003) approach. Considering the large volume of the data this study drew on, its findings should create a solid foundation for future research and organizational interventions.

Conclusions

Given the prevalence of absenteeism in education and its negative consequences, this study contributes to better understanding of the factors associated with a decrease or increase in absence behavior over a two-year period. These results show that absenteeism can largely be predicted by background variables and prior absence

record. These results can be used in different ways. First, a profile of teachers who are more prone to absence behavior can be drawn by means of the background variables in this study. Such a profile would include younger age, lower education, and lack of a supervisory position. Focusing on proneness to absenteeism in future research will enhance the understanding of this behavior. Interestingly, gender and other family-related characteristics are not part of this profile.

Second, the knowledge derived from this study can mobilize organizational practices and interventions designed to minimize absenteeism whenever it is perceived as destructive. Management should plan and implement extended prevention techniques, based on those factors found most conducive to absence behavior, and directed at those employees or subgroups of the human force found vulnerable to absenteeism. For example, the findings regarding school positions allude to the need to regulate selection to school position in such a way that many teachers will be exposed to extra-teaching duties. Job rotation and professional training are only two of the mechanisms conducive to attaining this goal. Exposure to school positions, accompanied by appropriate training, would allow teachers to exercise various skills, feel in control, and be motivated by better job design.

Third, the results of this study should be used as a foundation for future research that will unveil the psychological and social processes behind the "hard" background variables. For example, age should reflect the pursuit of specific age-related life interests, while holding school positions might reflect the sense of control and personal accountability. Such studies will complement research focused on psychological and social-organizational concepts that impinge on employee absenteeism, such as job satisfaction (Goldberg and Waldman, 2000), job involvement (Baba and Jamal, 2002), and job stress (Iverson *et al.*, 1998), as well as research focused on organization change, such as downsizing (Savery *et al.*, 1997).

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