

School Ethnicity and Governance Influences on Work Absence of Teachers and School Administrators

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Purpose: *The purpose of the study was to examine the extent to which school ethnic affiliation (Jewish vs. Arab) and site-based management affected the absence of teachers and school administrators.*

Research Design: *Background individual and organization-level data on the population of elementary and middle-school teachers (52,056 teachers at 2,145 schools) in the Israeli public education system were studied by means of multi-level analysis (HLM).*

Findings: *Controlling for individual workload, school size, and school level, the authors found that the higher a teacher's administrative position, the fewer his or her absence spells. This tendency was more pronounced in the Arab-sector schools, although being affiliated to Arab schools tended to increase teachers' absenteeism.*

Value: *The study contributes to our understanding of the influence of a school's ethnic affiliation and other school-level characteristics on work absenteeism, a topic traditionally studied at the individual level of analysis. When, as in the present case, ethnic affiliation coincides with resource deprivation and marginalization in the broader society, an increase in withdrawal behavior such as work absence can be expected. The school hierarchy and one's position in it also emerge as important factors to be considered in the planning and design of further research on teachers' absence behavior.*

Keywords: *absenteeism; schools; administrators; school-based management; ethnicity*

Recent reviews (e.g., Harrison & Martocchio, 1998; Johns, 2003) document researchers' continued interest in exploring the antecedents of absence behavior. This ongoing research interest is because of, among other factors, the need to understand the multiple causes of this phenomenon, the detrimental effects of absenteeism on workflow and performance, and the considerable costs of absence behavior to organizations (Nicholson & Martocchio, 1995).

Less attention has been paid to absences of supervisors and managers. Because managers and supervisors are responsible for monitoring and controlling their subordinates' absence behavior, researchers have naturally studied the effects of leadership style on subordinates' absence (Gilmore, Ferris, Dulebohn, & Harrell-Cook, 1996; Landstad, Viknberg, Ivergard, Gelin, & Ekholm, 2001; Van Dierendonck, Blanc, & Van Breukelen, 2002). We were unable to find any prior research on the precursors and consequences of managers' and supervisors' absence behavior. Yet these office holders are exposed to the same set of personal and organizational predictors of absence behavior as those affecting their subordinates. Moreover, the absence of administrators is more visible and can affect their own and their subordinates' work production. Managers' and supervisors' absenteeism, then, warrants serious investigation.

The problem of administrators' absences is perhaps more pronounced in school education than in other organizations because of its potential effects on the educational/social environment. Although school hierarchies are relatively flat, they still consist of various position holders, such as principals, vice principals, and other supervisors. Often these administrators continue to have teaching duties so their work affects educational as well as organizational issues. Studies show that teachers' absenteeism negatively affects students' achievements (Woods & Montagno, 1997) and is positively associated with student absenteeism (Ehrenberg, Ehrenberg, Rees, & Ehrenberg, 1989). Absenteeism by teachers who also serve as the school's supervisory personnel may well have an even more forceful impact on students and school affairs than the absenteeism of rank-and-file teachers.

Furthermore, insofar as organizational factors affect absenteeism, this effect will probably be stronger in the case of administrators than of rank-and-file employees. Studies show that absenteeism from work is influenced by individual but also by organizational factors. Organizations generate collective values, norms, processes, and procedures that contribute, among other things, to the encouragement or inhibition of absence behaviors (Johns & Nicholson, 1982). In one of the few studies on school-level effects on teachers' absence, Imants and Van Zoelen (1995) showed that an open school climate strongly affected teachers' absenteeism. By the rationale presented

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above, school administrators, whose work involves more use of organization-wide resources than does that of the typical rank-and-file teachers, are more likely to be affected by organization-level characteristics.

This study set out to investigate two things: the contribution of school administrative position on teachers' absenteeism and the effect of key school characteristics on absenteeism of school educators—namely, teachers and administrators. Holders of three top school administrative positions were considered: principals, vice principals, and class coordinators. The key school-level characteristics that we focused on were site-based management (SBM) and sectoral ethnic affiliation, controlling for school size and school level at the organizational level and teachers' workload at the individual level.

The Israeli public school system was selected as the study site because of the prevalence of absenteeism in it. In 2003, teachers' absenteeism in this system was officially noted (Office of the State Comptroller and Ombudsman, Jerusalem, Israel, 2003) to be a serious problem, mainly because of the cost of substitute teaching.

The hierarchical structure of Israeli schools provided an opportunity to focus on the relationship between position in a school's administrative hierarchy and teachers' absenteeism. Officially, all school administrators are included in the government database of school teachers (more detail is provided under Population and Sample), and their employment terms are negotiated by the teachers unions. Every administrator is also considered a teacher for most purposes of human resource procedures (e.g., pay, promotion, pension benefits). In practice, positions such as vice principal and coordinator (class and subject) are staffed by teachers, who are financially compensated for their administrative work. Principals are almost invariably recruited from the teachers' ranks and are required to teach a minimal number of hours. Absenteeism by school administrators is reported in the same way as that by rank-and-file teachers and is fed into the same database. This structure enabled us to study the extent to which teachers' absenteeism could be predicted by their administrative position and to investigate the effect of other individual and organizational factors on administrators' absenteeism.

Next, we establish the theoretical framework for the expected association between school administrative positions and absenteeism. We then set the theoretical background for organizational effects on administrators' absenteeism.

THEORETICAL FRAMEWORK

Predicting Absenteeism by Background Characteristics

Work absenteeism is largely considered a withdrawal behavior. In this manner, employees respond behaviorally to job dissatisfaction or maladaptation to work, with the intention to reduce work role inclusion (Hulin, 1991; Hulin, Roznowski, & Hachiya, 1985).

In an attempt to determine “what predicts absenteeism,” researchers have for years investigated the effects of a wide spectrum of individual and organizational factors. One of the most comprehensive studies is Steers and Rhodes’ (1978) absenteeism model. This highly influential and widely cited model (Burton, Lee, & Holtom, 2002; Harrison & Martocchio, 1998) posits that absenteeism is determined by a host of situational and personal factors that affect an employee’s motivation to attend. Background demographic variables such as age, gender, education, and tenure carry considerable weight in this model. Scott and Wimbush (1991) tested the validity of Steers and Rhodes’ study among high school teachers and found gender effects (females were absent more frequently than males).

This focus on demographic and other background predictors stands in contrast to other approaches to absenteeism, surveyed by Hulin (1991) and Johns (1997), in which work attitudes, particularly job satisfaction, are considered major determinants of absenteeism. A number of researchers have tried to resolve this apparent conflict. Brooke (1986), in his critique and modification of the Steers and Rhodes (1978) model, held that demographic variables should be treated as a test of the explanatory power of a causal model and not as determinants themselves. He suggested that researchers include demographic correlates in regression models to examine the incremental explained variance resulting from their introduction. Johns (1997) placed more importance on demographic variables, emphasizing the contribution of age, tenure, and gender to the understanding of absenteeism. For example, he explains the negative relationship found between age and absence by self-selection processing, whereby older employees are the ones who stay because of higher job satisfaction. Another source of support for the demographic approach to absenteeism is Goldberg and Waldman’s (2000) work. These researchers found that when job satisfaction was included in a model composed primarily of demographic and background variables (wage, health, and position level), it did not contribute much to the explained variance. From these studies it can be concluded that background variables are powerful predictors of absenteeism, although the psychological and sociological explanations behind them might vary.

Administrative Position and Absenteeism

Very little research has been conducted on absence behavior of managers or supervisors, as distinct from rank-and-file employees. One of several reasons for this lacuna is that managerial employees are by the nature of their work less monitored for compliance with attendance rules than nonmanagerial employees. Second, managerial work is often associated with representational and informational functions often carried out on the premises of other organizations, which hinders an objective assessment of their attendance behavior. Third, managers are often exempt from adhering to official attendance policy.

Although direct evidence is scarce, a number of studies of various occupations have pointed to the link between position level and absenteeism. For example, Cooper and Bramwell (1992) and Johns (1997) showed that position level was negatively associated with absence frequency (but not time lost). Goldberg and Waldman (2000) found that position level was a significant predictor of absence behavior, whereas other demographic variables (e.g., marital status, tenure, number of children) were not. These findings tend to suggest that holding a higher organizational position is linked with a tendency to be less absent. Yet because most previous studies treat position level as a control variable, they have offered scant theoretical rationale regarding the link between position level and absenteeism.

The motivation literature provides theoretical clues explaining the above consistent finding. Managerial jobs are likely a priori to be more enriched than those of rank-and-file employees because managers have more opportunities to plan, execute, control, and evaluate their own jobs. From Herzberg, Mausner, and Snyderman's (1959) original job enrichment theory, the work of employees in managerial positions seems to be more "vertically enriched" in terms of responsibility and advancement. A meta-analysis on job satisfaction showed that the more enriched the job, the higher the occupant's job satisfaction (Newman, Edwards, & Raju, 1989). In another meta-analysis, job satisfaction proved negatively related to absenteeism (Scott & Taylor, 1985). It is therefore expected that employees in managerial positions who enjoy job enrichment will tend to be less absent.

Another motivational framework that supports this argument is Hackman and Oldham's (1980) job characteristics model. According to this model, well-designed jobs in terms of five core characteristics (autonomy, skill variety, task identity, task significance, and job feedback) lead to improved work outcomes. Studies show consistently that better job design is linked to decreased absenteeism (Fried & Ferris, 1987; Rentsch & Steel, 1998). Again, managerial work is potentially better designed, particularly in terms of

autonomy and skill variety, than is nonmanagerial work: Managerial work is autonomous by nature, and managerial tasks tend to vary (Kurke & Aldrich, 1983; Mintzberg, 1973). In a study in which the work of Israeli school principals was observed, Rosenblatt and Somech (1998) showed that their work was highly varied. In another study Rosenblatt (2001) demonstrated that Israeli teachers who held administrative jobs (with supervisory and managerial elements) in addition to their teaching jobs were characterized by higher skill variety and better skill utilization than rank-and-file teachers.

Additional support for the finding that managers are less absent from work emerges from Karasek's (1979) theory on the mental strain of work. This author characterized jobs by two key features: job demand and job control. He argued that the interaction between high-demand and low-control jobs was closely associated with workers' tendency to take sick days. Empirically linking Karasek's theory to absenteeism, Dwyer and Ganster (1991) reported that high demands on manufacturing employees were associated with voluntary absence under conditions of low perceived control. Assuming that school administrative work involves higher levels of control than the work of nonadministrative employees and that demands at the administrative level are at least comparable to those on other employees, Karasek's theory helps explain the positive association between administrative positions and absenteeism frequency.

From all the foregoing it follows that the higher the positions teachers hold, the lower will be their absenteeism. Hence,

Hypothesis 1: School administrative position is related to absenteeism: The higher the position held by a teacher, the lower will be the absenteeism.

Organizational Effects on Teachers' and Administrators' Absenteeism

Recent studies point to the importance of organizational effects on individual absence behavior (Markham & McKee, 1995; Rentsch & Steel, 2003). Extant findings support the notion that organizational- and group-level mechanisms affect absence behavior. For example, in a longitudinal study, aggregate measures of job involvement were found to predict departmental levels of time lost in sickness absenteeism (Steel, 2003). Mathieu and Kohler (1990) showed that group absence rates predicted individual absenteeism. Researchers have labeled the effect of organization-level factors on absenteeism as *absence culture*, defined as "the set of shared understandings about absence legitimacy in a given organization and the established 'custom and practice' of employee absence behavior and its control" (Johns & Nicholson,

1982, p. 136). Factors that represent absence culture are usually attendance-related norms developed at the group level. These are shared working norms that are exhibited through patterns of attendance and absence from the job. These norms might be a product of the larger society's culture. Accordingly, Xie and Johns (2000) studied absence behavior of Chinese workers, stressing the relation of this behavior to these workers' cultural background.

The present study focused on the effects of two school-level characteristics: school SBM and school ethnic sector (Arab vs. Jewish). In the following sections, we present the implications of these two social-cultural contexts for teachers' absence behavior, focusing on the absence behavior of school administrators.

SBM Schools and Absenteeism

We expected self-management designs in schools to increase attendance. School SBM represents a decentralized structure, in which authority moves from the local or central education authority to the school level. Often this move coincides with school culture focused on shared decision making (Nir, 2002). Inherent to this culture is the fact that school stakeholders, particularly teachers, are expected to be part of school decision-making processes, leading to increased commitment and involvement.

Studies on SBM have indicated that it leads to improved school effectiveness (Cheng, 1996a, 1996b; Wohlstetter & Odden, 1992). For example, Smylie, Lazarus, and Brownlee-Conyers (1996) showed that SBM led to increased accountability and organization learning through internal processes such as motivation to work. In Israel, Gaziel (1998) found that SBM schools were more effective than non-SBM schools in a number of teachers' attitudinal outcomes. As the role of teachers in SBM schools changes from that of "order receiver" to that of "partner" and "decision maker" (Cheng, 1996b, p. 56), their job involvement increases, leading to decreased absenteeism (Mathieu & Kohler, 1990).

In Israel, decentralization efforts in the public education system started as early as the 1970s. In the 1980s, SBM was introduced as an experiment through administrative directives with the goal of increasing school-level autonomy. The reform was introduced incrementally, starting with selected schools in Jerusalem and gradually expanding to other regions. SBM reform in Israel was based on the following guidelines: clear definition of focused goals and work plans, monitoring and assessment measures, budget control, and the institution of governing bodies (Nir & Eyal, 2003). Although decentralized schools in Israel developed various models of operation (Gibton, Sabar, & Goldring, 2000), the centralized training given to principals and

staff by government agencies led to a uniform pattern of SBM implementation (Nir, 2002).

One of the government's stated expectations of SBM was that these schools would reduce teacher absenteeism. The rationale was that principals who controlled their school budget would be motivated to save on substitutes' pay in favor of other school needs. In line with this expectation, the government initiated a plan in the initial phase of the SBM reform whereby a certain amount of money was earmarked for substitutes' pay, but principals at their own discretion were free to divert its purpose. This plan was meant to encourage SBM principals to lower absenteeism in their respective schools. We therefore expected that absenteeism of Israeli teachers in SBM schools would be lower than that of teachers in non-SBM schools.

Hypothesis 2a: Teachers at SBM schools will be less absent than teachers at non-SBM schools.

SBM and administrators' absenteeism. We further assumed that the effects of affiliation with SBM schools would be exacerbated in the case of school administrators. SBM has been mostly designed to increase responsibilities and accountability of local decision makers (Cranston, 2000). Gibton et al. (2000), who studied Israeli SBM principals, observed that they became political and moral leaders in their schools and, to some extent, in their respective communities at large. So presumably such principals would tend to set a good example, observing work rules and ethics such as attendance behavior. As for administrative positions other than principalship, Gibton et al. argued that accountability should be spread evenly throughout the system, to be binding on other school staff. In sum, we expected SBM to affect administrators' absenteeism.

Hypothesis 2b: The negative association expected between administrative position and teacher absenteeism (Hypothesis 1) will be greater in SBM than in non-SBM schools.

Ethnic Sector and Absenteeism

School ethnic sector represents a unique set of values that define subcultures within the general school population. Consistent with the findings of Hofstede (1991) and House, Javidan, Hanges, and Dorfman (2002), we may expect that societal values, whether representing the whole or a subpopulation, can explain work behavior such as absenteeism. Studies show that absenteeism is a socially based behavior, appearing at work but also in other

life settings (Harrison & Price, 2003). Presumably, then, work absenteeism can be explained by social and cultural values.

The Israeli public educational system provides a test case for studying ethnic differences in regard to absenteeism. This system consists of two ethnic sectors, Jewish and Arab. The two sectors are segregated geographically so that schools are highly homogeneous in the ethnic background of their students, teachers, and administrators. The Arab-sector schools cater to students of the Arab minority in the Israeli educational system: roughly 22% of the population, according to the Central Bureau of Statistics (2000). Although the Arab sector is administratively separate, the state educational authority makes major decisions. The Ministry of Education maintains close control over the minority schools, reflected in intervention in curriculum design and in human-resources decisions pertaining to the teaching workforce (Al-Haj, 1995; Gaziel, 1996).

The two ethnic sectors have proved to differ in allocation of educational resources. Benavot and Resh (2003) claimed that "Arab sector schools have received—and continue to receive—fewer financial and material resources than schools in other sectors" (p. 177). Al-Haj and Rosenfeld (1990) indicated that Arab schools have lower per-pupil investment ratios than do their Jewish counterparts. Adler (1989) stated that "the separateness of schools between Arabs and Jews may curtail their ability to provide equalization of social opportunities for Arab students" (p. 23). Mar'i (1989) showed a huge gap between the Jewish and Arab educational systems in technical education. He contended that Arab schools received less than their due in educational resources, being vulnerable to political manipulation. The Arab population, according to Mar'i, lacks the political and economic power necessary to mount any opposition to the majority's control.

More evidence of organizational injustice within the Arab sector is reported by Rosenblatt and Hijazi (2004) in their study on teacher promotion in Israel. They showed that distribution of school administrative positions was less equitable among Arab teachers than among their Jewish counterparts. That study also showed that Arab teachers experienced significantly higher levels of organizational injustice pertaining to promotion to school positions than did Israeli teachers.

The link of these findings with absenteeism accords with results of studies pointing to a relationship between organizational justice and absence behavior. For example, Geurts, Schaufeli, and Rutte (1999) showed that the sense of inequity in employment relationship was directly related to absence from work. Colquitt, Noe, and Jackson (2002) found that a climate of procedural justice (referring to a shared notion of the processes involved in resource allocation) was related to team absenteeism. We therefore expected that teachers

in the Arab sector, who were likely to experience higher levels of organizational injustice than their Jewish counterparts, would tend to be more absent from work.

Hypothesis 3a: Teachers in the Arab sector will be more absent from work than will teachers in the Jewish sector.

Ethnic sector and administrators' absenteeism. What is the effect of ethnic sector—affiliation with the Arab or Jewish sector—on the relationship between administrative position and teachers' absenteeism? School administrators in the Arab sector in Israel work closely with the central educational authority. Given the considerable dependence of Arab administrators on state funding (having less access to funds from alternative sources: see Benavot & Resh, 2003), Arab administrators perhaps make extra efforts to conform to work behavior rules than do rank-and-file Arab teachers. It should be added that promotion within the Arab school system has been one of the few avenues open to Israeli Arabs to improve their social and economic status (Al-Haj & Rosenfeld, 1990). Hence,

Hypothesis 3b: Ethnic sector (Jewish vs. Arab) will affect administrators' absenteeism in the following way: As administrative position becomes higher, the rate of decrease in absenteeism will be higher in the Arab sector than in the Jewish sector.

The above set of hypotheses were investigated with variables controlled as follows. At the individual level, workload of the individual teacher was controlled on the assumption that workload naturally provides opportunities to be more absent. At the organizational level, school size was controlled because previous studies showed consistently that absenteeism is higher in larger schools (e.g., Barmby & Stephan, 2000; Winkelman, 1999). School level (elementary vs. middle) was also controlled, assuming that the different responsibilities might have some effect on absenteeism rate (no direction predicted).

METHOD

Population and Sample

The Israel Ministry of Education made available to the researchers the government archives of all Israeli teachers in public elementary and middle schools in the 2001-2002 school year. Teachers who worked in the Jewish

settlements located in the West Bank and Gaza Strip were excluded from the list because security conditions during those school years were very likely to have affected work attendance. Also excluded were teachers who taught less than 30% or more than 160% of a full-time job, teachers who had worked fewer than 6 months, and teachers who worked at very small schools (employing five teachers or less). We also excluded from the study sample teachers whose absence was related to maternity leave, military reserve duty, and strikes declared by a teachers union, because these reasons normally represent highly involuntary causes of absenteeism. Teachers whose absence rate was extremely high per year (more than 23 absence spells, more than 55 absence days, more than an average of 15 days per absence spell, more than 38 absent teaching hours) were excluded as well (790 teachers). Our final sample was 52,056 teachers affiliated to 2,145 schools.

Analysis of all other reasons for absenteeism reported by teachers showed that more than 80% were sickness related. Note that the collective employment contract of Israeli public-school teachers provides for a relatively large number of paid sick-leave days per year (30 days). There is little incentive in the Israeli system to not take advantage of this generous right. Because verification of doctors' notes was not possible in this study, we treated all reasons given for absenteeism uniformly. This approach is in step with Casio's (2003) definition of absenteeism as "any failure of an employee to report for or to remain at work as scheduled, regardless of reason" (p. 45). A similar approach was taken by Bowers (2001, p. 137) in his study of absenteeism among UK teachers.

Variables and Measurement

Absenteeism frequency (individual level). Absenteeism frequency (spells or incidents) and not duration (time lost) was selected for this study for the following reasons. First, absenteeism frequency is regarded by a number of absenteeism researchers (e.g., Steel, 2003) as a measure of "voluntary" absenteeism, meaning that it generally indicates missing work for reasons other than illness. Second, in previous studies, absenteeism frequency was found to have more temporal stability than duration measures, which are bound to be affected by the incidence of chronic diseases (Steel, 2003). Third, studies on Israeli workers reported consistently that absenteeism spells were a more reliable measure than time-lost measures (Melamed, Ben-Avi, Luz, & Green, 1995; Westman & Etzion, 2001). A total of 276,164 absenteeism spells were analyzed for this study. The nonnormal distribution of this measure is demonstrated in the following psychometric attributes: range of 0 to 45 incidents

per person, with a mean of 5.31, standard deviation of 4.42, median of 4.00, skewness of 1.68, and kurtosis of 5.27.

Administrative position (individual level). The administrative position variable was rank ordered as follows: 0 = no position (rank-and-file teacher), 1 = class or subject coordinator, 2 = vice principal, 3 = principal.

SBM (organizational level). Schools that were part of the SBM program of the Israel Ministry of Education were assigned 1, and others were assigned 0.

Ethnic sector (organizational level). Israeli schools were clearly defined by ethnic affiliation (Jewish vs. Arab) and run accordingly by separate administrations. The faculty and student body in each school are generally homogeneous in terms of their ethnic affiliation. Therefore, teachers' ethnic affiliation was measured on the organizational, not the individual, level. Jewish schools were assigned 1, and Arab schools 0.

Workload (individual level, control variable). This variable represented yearly working hours ($M = 726.63$, $SD = 241.02$).

School size (organizational level, control variable). This variable represented the number of students in the school ($M = 386.45$, $SD = 222.73$).

School level (organizational level, control variable). Middle schools were assigned 1, and elementary schools 0. Note that most of the SBM schools were on the elementary level.

Data Description

Descriptive statistics of absence frequency for the study sample showed the following. Average rate of absence events of teachers included in the final study sample was 5.30 ($SD = 4.42$). Administrators (31% of the study sample) were absent at a rate of 4.93 ($SD = 4.26$), whereas the absence frequency of teachers with no administrative positions was 5.47 ($SD = 4.47$). Teachers at SBM schools (17%) were absent at a rate of 5.17 ($SD = 4.26$) events, compared with the rate of 5.33 at non-SBM schools. The absence rates of administrators compared with nonadministrators at SBM schools were 4.90 ($SD = 4.07$) and 5.31 ($SD = 4.34$), respectively, and at non-SBM schools they were 4.93 ($SD = 4.31$) and 5.50 ($SD = 4.49$), respectively. Finally, teachers affiliated to Arab schools (24% of the study sample) were absent at a rate of 7.88

($SD = 5.64$) events, compared with a rate of 4.48 ($SD = 3.56$) for their Jewish counterparts. The absence rates of administrators compared with nonadministrators at Arab schools were 6.94 ($SD = 5.49$) and 8.29 ($SD = 5.66$), respectively, and at Jewish schools 4.29 ($SD = 3.56$) and 4.56 ($SD = 3.56$), respectively.

Analysis

We wanted to investigate the cross-level effects of the school-level variables on teachers' and administrators' absenteeism while controlling for the effects of individual-level workload as well as for the cross-level effects of certain school characteristics. Because of the nested structure of the data (teachers within schools), observations in our data could no longer be regarded as independent; and we needed multilevel analysis for modeling the structure of the data. Therefore, hierarchical linear modeling (Bryk & Raudenbush, 1991) was employed.

Because the dependent variable was a count variable (absenteeism frequency) whose distribution is typically not normal, the specific model selected was the generalized hierarchical linear model. This procedure is applicable to a family of distributions that includes, apart from the normal distribution, the Poisson and the Poisson with overdispersion. The latter are suitable for modeling count data (Gardner, Mulvey, & Shaw, 1995).

The research model posited that on level 1 (individual level of analysis), school administrative positions would be negatively related to absenteeism (Hypothesis 1). This relationship would be affected by two organizational variables (level-2 variables), SBM and ethnic sector (Hypotheses 2a, 2b, 3a, and 3b, respectively), as well as two level-2 control variables, school size and school level, and one level-1 variable, workload. The statistical model assumes that absenteeism frequency is distributed Poisson (possibly with overdispersion). The relationship between the conditional mean λ and the explanatory variables is expressed in the following equations:

$$\begin{aligned} \log \lambda &= \beta_0 + \beta_1(\text{Workload}) + \beta_2(\text{Administrative Position}) \\ \beta_0 &= \gamma_{00} + \gamma_{01}(\text{School Size}) + \gamma_{02}(\text{SBM}) + \gamma_{03}(\text{Jewish Sector}) \\ &\quad + \gamma_{04}(\text{Middle School}) + U_0 \\ \beta_1 &= \gamma_{10} + \gamma_{11}(\text{SBM}) + \gamma_{12}(\text{Jewish Sector}) + \gamma_{13}(\text{Middle School}) + U_1 \\ \beta_2 &= \gamma_{20} + \gamma_{21}(\text{School Size}) + \gamma_{22}(\text{SBM}) + \gamma_{23}(\text{Jewish Sector}) \\ &\quad + \gamma_{24}(\text{Middle School}) + U_2 \end{aligned}$$

The U_s are assumed to be normally distributed with $\text{Var}(U_i) = \tau_{ii}$

TABLE 1
Means, Standard Deviations, and Pairwise Correlations at the Individual Level (Level 1)

	<i>Administrative Position</i>	<i>Workload^a</i>	<i>Absenteeism Frequency</i>
Administrative Position	—	0.43	-0.15
Workload ^a		—	0.07
Absenteeism Frequency			—
Mean (SD)	0.39 (0.68)	726.63 (241.02)	5.30 (4.42)

NOTE: $N = 52,056$; $p < .0001$.
 a. Yearly working hours.

TABLE 2
Means, Standard Deviations, and Correlations at the Organizational Level (Level 2)

	<i>School Size^a</i>	<i>School Level (Middle)</i>	<i>SBM</i>	<i>Ethnic Sector (Jewish)</i>	<i>Absenteeism Frequency</i>
School Size ^a	—	0.12***	-0.06*	-0.22***	0.25***
School Level (Middle)		—	-0.28***	0.04	-0.021***
SBM			—	0.15***	-0.02
Sector (Jewish)				—	-0.59***
Mean (SD)	386.45 (222.73)	0.25 (0.43)	0.19 (0.39)	0.78 (0.41)	5.30 (4.42)

NOTE: $N = 2,145$. SBM = site-based management.
 a. Number of students.
 * $p < .01$. ** $p < .001$. *** $p < .0001$.

RESULTS

Tables 1 and 2 present means, standard deviations, and pairwise correlations for the study’s level-1 (individual) and level-2 (organizational) variables, respectively. The strongest correlation was between absenteeism frequency and ethnic (Jewish) sector ($r = -0.59, p < .0001$), meaning that, in general, Jewish teachers tended to be less absent from work than Arab teachers.

Tables 3 and 4 present the results of the hierarchical analysis. Note that the results of the variance components (Table 4) justified a varying coefficient model that included an overdispersion parameter. As portrayed in Table 3, the parameter estimate of intercept 1 (teacher in nonadministrative position, with average workload, employed at an average-size elementary-level school, which is non-SBM and non-Jewish) is 2.13. The level-2 variables,

TABLE 3
Results of the Multi-Level Analysis

<i>Fixed Effect</i>	<i>Parameter (Logistic β)</i>	<i>Parameter Estimate</i>	<i>p Value</i>
Absenteeism frequency	Intercept 1 β_{0j}		
Intercept 1	γ_{00}	2.133667	.000
School size	γ_{01}	0.000384	.000
SBM	γ_{02}	0.007945	.698
Ethnic sector (Jewish)	γ_{03}	-0.531412	.000
School level (middle)	γ_{04}	-0.279055	.000
Workload	Slope, β_{1j}		
Intercept 2	γ_{10}	0.000515	.000
SBM	γ_{11}	0.000034	.515
Ethnic sector (Jewish)	γ_{12}	0.000132	.002
School level (middle)	γ_{13}	0.000038	.397
Administrative position	Slope, β_{2j}		
Intercept 2	γ_{20}	-0.285816	.000
School size	γ_{21}	-0.000020	0.395
SBM	γ_{22}	0.002276	0.882
Ethnic sector (Jewish)	γ_{23}	0.050698	.000
School level (middle)	γ_{24}	-0.015884	.260

NOTE: $N = 52,056$ (teachers), 2,145 (schools).

TABLE 4
Final Estimation of Variance Components

<i>Random Effects</i>	<i>Notation</i>	<i>Variance Component</i>	<i>p Value</i>
Intercept 1	τ_{00}	0.08968	.000
Workload, Slope	τ_{11}	0.0000	.000
Administrative position, Slope	τ_{22}	0.00537	.028
Level 1	σ^2	2.360	

school size, school sector, and school level, as well as the level-1 variables, workload and administrative position, predicted absenteeism. Both workload and administrative position contributed, in turn, to teacher absenteeism.

Hypothesis 1 stated that school administrative position would be associated with lower absenteeism and that the higher the position, the lower the absenteeism. The findings supported this hypothesis. Results also showed that the control variable workload was significantly related to absenteeism frequency, albeit weakly: the higher the workload, the greater the absenteeism frequency. Affiliation with the Jewish sector slightly increased the effect of workload on absenteeism.

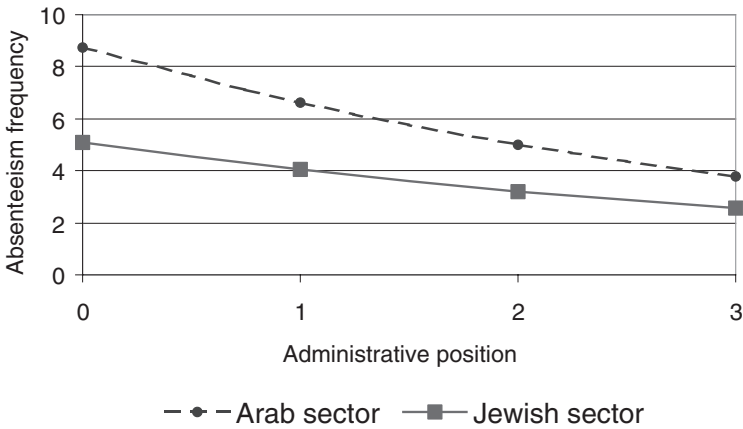


Figure 1. Interactive Effects Between Ethnic Sector (Jewish vs. Arab) and Administrative Position on Absenteeism Frequency

Hypotheses 2a and 2b, respectively, stated that SBM schools would be negatively associated with teacher absenteeism and with administrators’ absenteeism. These hypotheses were not supported: Results showed that affiliation with SBM schools had no significant effect on absenteeism.

Hypothesis 3a stated that absenteeism in the Arab-sector schools would be higher than absenteeism in Jewish-sector schools. The results supported this hypothesis: Affiliation with the Arab sector affected absenteeism frequency significantly and positively. For example, if we compare two educators who share the same characteristics except ethnic origin and neither has any administrative position (rank-and-file teacher), the absenteeism frequency of the teacher affiliated to the Jewish sector will, on average, be about 60% of the absenteeism frequency of the teacher affiliated to the Arab sector (factor of 0.588 = $\exp[-0.531]$). This finding supported Hypothesis 3a.

However, the ethnic sector effect decreased with elevation of administrative position. To continue the above example, if two educators who share the same characteristics except ethnic affiliation are administrators, the absenteeism frequency of the Jewish administrator will be only 68% ($0.685 = \exp[-0.531 + 3(0.051)]$) of the Arab administrator’s. This last finding is also depicted in Figure 1, which illustrates the rate of change in absenteeism frequency in both sectors. It shows that the effect of administrative position on absenteeism was larger in the Arab section. In other words, the rate of absenteeism decrease among Arab-sector administrators was higher than among their Jewish counterparts. This finding supported Hypothesis 3b.

Ethnic sector was also found to affect the relationship between workload and absenteeism. However, this effect was statistically but not practically significant.

As expected, school size had a significant effect on absenteeism (coefficient 0.038, $p < .000$). If we compare two teachers who share the same characteristics except for their school size, the teacher in a school with 100 more students will on average be $1.039 = \exp(0.038)$ times more absent.

The effect of the school-level variable middle (vs. elementary) school was significant and negative ($\exp[-0.279 = 0.756]$). Teachers in middle schools will be absent about 75% of the frequency expected of elementary-school teachers with the same characteristics in the other variables.

DISCUSSION

This study set out to investigate the extent to which administrative position predicts teachers' absenteeism and the effects of school characteristics, in particular SBM and ethnic sector, on absence behavior of teachers and administrators. We tested our study model on a sample of elementary- and middle-level teachers in the 2001-2002 school year. Hypotheses regarding the contribution of administrative position and the effects of ethnic sector and school SBM on teachers' absenteeism frequency, and the interaction between organization and individual effects, were tested.

Results showed that administrative position predicted teacher absenteeism. This finding was expected (Hypothesis 1) based on job design theories showing repeatedly that more enriched, better designed, and better controlled jobs favorably affect work outcomes.

Of the organizational variables investigated, ethnic sector had the strongest effect: Rank-and-file teachers affiliated to the Jewish sector were absent at only about 60% of the frequency of teachers affiliated to the Arab sector. This finding supports the study's third hypothesis, which was based on evidence of organizational injustice. An alternative explanation might be related to cultural values. Israeli-Arab society has been characterized as more collectivist and traditional than Israeli-Jewish society (Eilam, 2002). In collectivist societies, family and community commitments may have higher priority over work commitments than in individualistic societies. An example of the link between such commitments and work absence was documented in Uehara's (1999) study on teacher absenteeism in the Pacific region, in which attending funerals was listed as the second top reason for it. Reasons external to work perhaps draw Arab teachers away from work more than they do their Jewish counterparts. Future study needs to investigate this possibility.

The most striking, albeit expected, results of this study are perhaps those pertaining to the interaction between the effects of ethnic sector and those of administrative position on absenteeism. For school administrators the rate of decrease in absenteeism proved lower in Jewish than in Arab schools. For teachers in the Arab sector, this trend may reflect the end result of two conflicting forces: that impelling Arab teachers more than Jewish teachers toward absenteeism and that impelling rank-and-file teachers more than administrators toward absenteeism. Apparently, the latter force is stronger among Arab than Jewish administrators, so the rate of decrease of absenteeism in Arab administrators is considerably higher than in Jewish administrators.

The other organization-level variable investigated, SBM, had no effect on either rank-and-file or administrative teachers' absenteeism, contrary to the study's (first) hypothesis. Because in its genuine form SBM entails enhanced involvement of teachers in school decisions and operations, as well as increased accountability, this finding is surprising. The explanation may lie in the way school SBM has been implemented in Israeli schools. Nir (2002) studied the effects of the introduction in the 1990s of SBM into 28 Israeli schools. He measured school organizational health for three consecutive years (1998-2000), controlling for teachers' background characteristics. Generally, no significant changes in school health were observed. Moreover, teachers reported having lower morale and a heavier bureaucratic load than in the pre-SBM situation. Also, a decrease of resource support for teachers was observed. Nir (2002) concluded that "neglecting teachers' psychosocial and professional needs while introducing SBM will create an illusion of personal and organizational autonomy that will dissolve in time" (p. 387). Hence, one might infer that because of the way SBM was introduced in Israel, it failed in its intended effects on teachers; therefore, the expected positive effect on absenteeism did not materialize. More studies in other SBM systems are needed to further clarify the presumed effect of SBM on absenteeism.

The two controlled organization-level factors studied, school size and school level, were found to affect absenteeism. In regard to the former, teachers in larger schools tended to be absent more frequently than those in smaller schools, corroborating previous findings (Barmby & Stephan, 2000; Winkelman, 1999). No interaction was found between school size and administrators' absenteeism. In regard to school level, teachers were more absent in elementary than in middle schools. This finding might be related to the different responsibility and accountability on the two levels. Unlike teachers in elementary schools, those in middle schools are responsible for the preparation of students to enter the increasingly competitive market of

secondary schools. As a result, they are more exposed to statewide comparative tests and school evaluation measures.

The contribution of the present study over that of most previous studies on contextual effects of absenteeism is its consideration of the nested structure of the data. Results showed that although size and school level were related to teachers' absenteeism, only ethnic affiliation was related to administrators' absenteeism.

CONCLUSIONS

Several implications for educators, decision makers, and researchers can be drawn from the study results. First and foremost, the lower absenteeism of administrators than of rank-and-file teachers points to the importance of delegating managerial responsibilities to a wide range of teachers. Given that most of the school administrators studied were teachers, the study results allude to the possibility that the higher the administrative position to which teachers are exposed, the lower the likelihood of their being absent from work. This delegation may be accomplished, for example, through the institution of job rotation with administrative positions. Increased transparency of selection and promotion procedures may secure more equal opportunities of being promoted to managerial positions and enhance a wider managerial base in the school.

Because the decrease in administrators' absence proved larger in the Arab sector than in the Jewish, the motivations for this decrease should be explored. We hypothesized that political reasons led Arab administrators to conform more to school rules and procedures than their Jewish counterparts. Other possibilities, embedded in the cultural source of work values and leadership, should be explored.

This study focused on background predictors of absenteeism. Following Price's (1995) discussion on the role of demographic variables in the study of this subject, we believe that the organizational background variables investigated in this study allude to motivational and social forces latently affecting absenteeism. Price referred to demographic variables as "proxies" and "indicators" and argued that using demographic variables in a theoretical model offers a unique way to explain the phenomenon under study.

Following this line, the results of the present study can be used for designing future research on the dynamics and social processes affecting absenteeism. For example, based on evidence from organizational-justice literature, we speculate that the difference between the Arab and Jewish teachers originates in teachers' perception of justice. Future studies should investigate the

role of these and other psychological processes in explaining cultural patterns of absenteeism. Such processes will complement findings on background variables and together provide a rich understanding of the sources of work absenteeism. Undoubtedly, studies of psychological sources of absenteeism call for “softer” measures (interviews, attitudinal surveys) than those used in the present study. In addition, the relation among manifestations of absenteeism in different school constituencies (teachers, administrators, students) should be explored. For example, a spillover effect might exist between absenteeism by principals and by their teaching staff or between teachers’ absenteeism and that of their classes. Such relations, if found, might support theories of absenteeism culture in schools (Nicholson & Johns, 1985).

Finally, these results might pave the way to other studies about the impact of school culture on school staff’s work behavior. To the degree that social norms and shared experiences were found to affect absenteeism, they might affect other work withdrawal behaviors, such as lateness and intent to leave, or positive behaviors such as organizational citizenship. The present study showed that knowledge of school characteristics is important for understanding work behavior above and beyond the more traditionally researched individual-level characteristics.

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