When the going gets tough: schools in challenging circumstances and the effectiveness of principals' leadership styles

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Abstract

The principal's leadership style is one of the most common ways of conceptualizing school leadership behaviors. We lack understanding, however, of how the effectiveness of school leadership styles varies across degrees of challenging circumstances. Data obtained from a quantitative survey of primary school teachers in Israel (N = 570) and from the Ministry of Education database were used to account for principals' leadership styles and their effectiveness in schools facing *more* challenging circumstances (N = 15) and in those facing *less* challenging circumstances (N = 46). Differences were found in the relations between principals' transactional behaviors on one hand, and relationships between the teaching dimension of school culture and principals' perceived effectiveness on the other, as a function of challenging school circumstances. The study also found a difference in the relations of principals' transformational behaviors and the safety dimension of school culture, by level of challenging school circumstances. The data also revealed that in schools facing less challenging circumstances, principals' passive behaviors were related to students' achievements and principals' perceived effectiveness, but not in schools facing more challenging circumstances. The findings and their implications are discussed.

Keywords: challenging circumstances, leadership styles, MLQ, school leadership, transformational leadership

1. Introduction

The present work investigates the effectiveness of principals' leadership styles under different degrees of challenge that schools face. Principals' leadership styles have been a key focus of interest in educational leadership research for the last three decades (Bush, 2014; Hallinger, 2003; Leithwood & Jantzi, 1990). Most studies addressing leadership styles focus on transformational school leadership, although other leadership styles, such as transactional and *laissez-faire* or passive leadership, have also been frequently explored (e.g., Bogler, 2001; Eyal & Roth, 2011). Despite the great interest in leadership styles, their effectiveness and relation with schooling have not been systematically investigated (Nir & Hameiri, 2014). Although leadership styles are often viewed as generic behaviors across situations and outcomes, critical works suggest that their effectiveness may be contingent on contextual aspects (Antonakis, Avolio, & Sivasubramaniam, 2003; Berkovich, 2016).

Scholars argue that leadership researchers, especially those of transformational leadership, focus on leaders' behaviors at the expense of the effect of context (Antonakis et al., 2003; House & Aditya, 1997). Sun and Leithwood (2012) found that most transformational school leadership studies do not directly explore the effects of moderators. Out of all possible moderators, one in particular seems crucial for explaining the success of schools and principals: the degree of challenge in the circumstances that schools face, i.e., the combination of socio-economic conditions that diminish the likelihood of success of schools (Ainscow, Muijs, & West, 2006; Harris, Chapman, Muijs, Russ, & Stoll, 2006). The present work argues that the challenging circumstances facing schools are a key moderator that deserves exploring, because they are vital to understanding the effectiveness of principals' leadership styles.

2. Theoretical Background

2.1 Effectiveness of principals' leadership styles

The full-range leadership theory, known also as leadership styles theory, is among the most prevalent ones in the field of education administration (Bush, 2014; Hallinger, 2003). For example, a review of the contents of educational administration textbooks suggests a clear dominance of the transformational leadership model over other models (see Berkovich, 2017). The theory identifies three styles: transformational, transactional, and passive. Transformational behaviors are aimed at changing followers' beliefs, values, and capabilities to promote their inclination to act beyond their self-interest, for the benefit of the organization (Eyal & Roth, 2011). Transactional behaviors are more instrumental than transformational ones, generally associated with task management orientation and leader-subordinate exchange (Bogler, 2001). Passive leaders tend to avoid social interactions with followers and to evade their responsibilities, and therefore such leadership style is perceived as "the absence of leadership" (Humborstad & Giessner, 2015).

A fundamental argument concerning full-range leadership theory suggests that some styles are inherently effective and others less so (Van Knippenberg & Sitkin, 2013). Syntheses of empirical evidence in organizational behavior research generally confirm the traditional assumption that a hierarchy of effective styles exists. For example, a recent meta-analysis indicates that transformational leadership shows a strong positive correlation with perceived leadership effectiveness (ρ =.50), whereas transactional leadership (i.e., management by active expectation) shows a low positive correlation, and passive leadership behavior a negative correlation with perceived effectiveness (Dumdum, Lowe, & Avolio, 2013).

In education administration research, the traditional assumption about leadership styles is similar to the one in organizational behavior research (Menon, 2014). Extending the current discussion to the effects of principals' leadership styles on school success is rather challenging because the effectiveness of the principals' styles is even less explored than principals' perceived effectiveness (Nir & Hameiri, 2014). The effect of principals' leadership style, particularly of transformational leadership, has been extensively studied with regard to teachers' internal states and their perceptions of school climate and operation (Leithwood & Sun, 2012). Although teachers' attitudes and behaviors are vital to school success, they are quite distal indicators of it, which explains why assessing the direct effects of leadership style on students' attitudes and behaviors produced meager effects. For example, recent meta-analyses of unpublished theses and dissertations show that principals' transformational behaviors make a small positive contribution to student achievement (Leithwood & Sun, 2012; Sun & Leithwood, 2012).

This hierarchical logic in full-range leadership theory is generic because it suggests that the effectiveness of a style is invariant across situations. Some works criticize claims of a universal hierarchy of leadership styles by order of effectiveness. Antonakis, Avolio, and Sivasubramaniam (2003) proposed that in context "Y" behavior "B" may not be necessary or may even be counterproductive. This is consistent with the contingency theory of organizational functioning, which suggests that the ideal or effective way to organize structures and processes in organizations depends on the conditions present (Scheerens & Bosker, 1997), and it is possible that the context in which leaders operate is of great importance.

2.2 Challenging school circumstances

Hargreaves and Harris (2015) argued that "the impact of effective leaders is especially important when schools operate in challenging circumstances" (p. 28). But reviewing the literature about challenging circumstances suggests that there is no agreed-upon definition of such circumstances (Table 1).

Table 1. Comparison of components in the definition of schools operating in challenging circumstances

	School socio-economic background								School past performance and internal conditions		
	General socio-economic conditions	General student body mix	Student body low SES	Student body non-hegemonic ethnicity	Parental attitudes/ support	High poverty	Unemployment rate	School location / urban-rural type	Prior school performance	School history (failure/ crisis)	Staffing difficulties
Ainscow, Muijs, and West (2006)		√			√			√		√	√
Hargreaves and Harris (2015)						√	√				
Harris (2002)			√	√				√	√		
Potter, Reynolds, and Chapman (2002)	√										
Present work			√	√	√	√	√	√			

The term "challenging circumstances" is ill-defined and suffers from conceptual blurring, as it combines the internal circumstances of a school (including past performance), which may be relatively dynamic and influenced by the educators' actions, with external socio-economic circumstances, which are relatively more stable and cannot be influenced by the educators' actions (Gu & Johansson, 2013). To avoid further confusion, the present work defines challenging circumstances as multiple socio-economic characteristics (parents' education and income, ethnic affiliation, migration status, unemployment and welfare status, urban vs. rural location, etc.), which are likely to lower the chances of success of the school. Harris (2009) described success in these schools as “against the odds.”

The idea that some schools operate in more complex settings is not merely a theoretical observation, as illustrated by the story of the turnaround of Montgomery County public schools (Childress, Doyle, & Thomas, 2009). A socio-economic mapping conducted in the district discovered "red zones" that contained large concentrations of students from poor families, belonging to minority communities, with poor English language skills. Challenging circumstances do not necessarily preclude the success of a school, but "one of the distinguishing features of schools in high-poverty communities is the amalgam of problems that young people face and, by association, the problems that staff in the school must deal with on a daily basis. Teachers… must work harder simply to get to the starting line—the point at which students feel able and willing to learn" (Harris, 2009, p. 86). Context is also believed to influence several domains such as task features, informational uncertainty, degree of resources and threats, and social norms (Hallinger, 2018; Johns, 2001). In a study conducted in Missouri, US, Hogrebe and Tate (2010) found that the effect of school and teacher variables on 10th-grade science proficiency was moderated by the race

and SES characteristics of the school. Gu, Sammons, and Mehta's (2008) longitudinal three-year study conducted in the UK showed that schools operating in disadvantaged contexts were under-represented in the sub-group of schools that was characterized by improving from low to moderate/high in attainment and by high effectiveness in value added (i.e., students' annual progress rate). These works stress "the importance of school socioeconomic context in interpreting differences in school performance results and trajectories" (Gu et al., 2008, p. 47).[1]

2.3 Challenging school circumstances and the effectiveness of principals' leadership styles

Most of the leadership style literature argues for a universal positive effect of specific leadership styles regardless of context, but some works contend that the positive effect of style is moderated by context. For example, Jansen, Vera, and Crossan (2009) suggested that transformational leadership correlates negatively with the exploitation of existing resources and technologies in dynamic environments, although it successfully supports the improvement of services in stable environments. Other works suggest that operating in work settings with specific instrumental task requirements can make transactional leadership more productive. For example, within the setting of a hospital trauma unit, a monitoring style that tracks mistakes can be regarded as valued and effective, but in a creative environment it may be considered

[1]School SES was found to be more relevant than school resources in explaining student achievement. Research reviewing studies on the effects of school resources on student achievement found that "[t]here is no strong or consistent relationship between school resources and student performance" (Hanushek, 1997, p. 148). Multilevel regression analyses using PISA data found that "schoolmates' parents' SES showed the largest effects" (Chiu & Khoo, 2005, p. 591) on test scores in math, reading, and science. These standardized coefficients were found to be 3-12 times larger than those of various school resources (i.e., time spent in each class, proportion of certified teachers, proportion of teachers with a relevant tertiary degree in their subject, teacher shortages, and teaching material shortages), which were also included in the models.

counterproductive (Antonakis et al., 2003). Humborstad and Giessner (2015) even suggested that in some contexts, a passive leadership style is associated with employee empowerment.

Arguments and evidence that support the idea of context moderating the effectiveness of leaders' behavioral styles appear also in the educational literature. For example, Hopkins (2001) argued that in schools with challenging circumstances the effects of leadership behaviors are amplified. Earlier works that investigated the differential effects of public school inputs and practices on learning by the social class composition of schools (low, middle, and high), found that student learning in schools with low social class composition are the ones most sensitive to school factors (Palardy, 2008). These findings are consistent with those reported by studies conducted in schools that face challenging circumstances and that have showed improvement. For example, Harris and colleagues (Harris, 2002; Harris et al., 2006) discovered that in these schools, effective principals use visionary rhetoric and display ethical conduct. Regarding the transactional leadership style, Muijs et al. (2004) indicated that task-oriented leadership, which focuses on the management of teaching and learning, is effective in improving schools that serve disadvantaged populations. In a sense, transactional leadership behaviors in schools facing challenging circumstances can act as direction-setting leadership, which in a recent meta-analytic review was found to be effective in influencing student achievement (Sun & Leithwood, 2015). Regarding passive leadership, the picture is even less clear, being the least explored of the three leadership styles. On one hand, under leaders displaying “whatever” mentality, employees are likely to embrace behavior patterns of incivility (Harold & Holtz, 2015); on the other hand, in some cases employees can feel empowered (Humborstad & Giessner, 2015). Lack of knowledge about these relations

requires an exploratory study of the issues outlined above. The present research focuses on the following question:

> *Research question:* Does the degree of challenge in the circumstances faced by schools moderate the association between principals' leadership styles and their perceived and actual effectiveness?

3. Method

3.1 Description of context

The present study was conducted in Israel, which has the third-largest degree of overall income inequality among developed economies (OECD, 2013). Primary education in the country is mandatory, and it is provided mostly by the state (Berkovich, 2014), making the Israeli public system an excellent object for investigating the effects of challenging circumstances. Primary schools are relatively more homogenous in their schooling context than high schools are, as populations with similar characteristics cluster together; therefore primary schools reflect to a greater extent the characteristics of the neighborhood in which they are located (Ammermueller & Pischke, 2009) than do high schools.

3.2 Sample and participants

The main portion of the data was obtained by combining field survey data with the Meitzav national testing database. The survey data were obtained from a random sample of 61 primary public schools in Israel, sampled from a list provided by the Ministry of Education (64% response rate). Five hundred and seventy teachers from 61 schools ($M = 9.3$, $SD = 2.14$) participated in the study, 91% of them women, with an average age of 41.55 years ($SD = 10.19$) and an average tenure of 16.90 years (*SD*

= 9.72). The teachers reported on the leadership styles and effectiveness of 61 principals, 72% of them female, with an average age of 50.50 years (*SD* = 7.31) and an average tenure as principals of 11.62 years (*SD* = 5.95). The survey was supplemented with data from the Meitzav national testing database, which was administered by state authorities toward the end of the same school year, producing indicators of outcomes (student achievement and school climate reported by students) at a later point in time. Meitzav achievement scores were based on a sample that included an average of 34.5 5th graders per school (the equivalent of 85% of 5th graders registered in those schools); and Meitzav climate scores were based on a sample that included an average of 80.2 5th and 6th graders per school (the equivalent of 88.6% of 5th and 6th graders registered in those schools).

3.3 Instruments

Principals' leadership styles. The study used the Multifactor Leadership Questionnaire (MLQ 5x) to measure the principals' leadership style (Bass & Avolio, 1994). Teachers assessed their principals' behaviors from the points of view of transformational leadership (TL; 16 items: idealized influence behavior, inspirational motivation, intellectual stimulation, individualized consideration; sample item: "My principal talks optimistically about the future"), transactional leadership (TA; 4 items: management by active exception; sample item: "My principal focuses attention on irregularities, mistakes, exceptions, and deviations from standards"), and passive leadership (PAS; 8 items: management by passive exception and *laissez-faire* leadership (see Avolio, Bass, & Jung, 1999); sample item: "My principal waits for problems to arise before taking action"). Participants rated items on a five-point Likert scale, ranging from 5 = frequently, if not always, to 1 = not at all. Factor structure and

the reliabilities of the measure are discussed in detail below, at the beginning of the Results section.

Leadership effectiveness. The study included one measure of perceived effectiveness of school leadership and two measures of school effectiveness (student achievement and school climate).

Leaders' effectiveness as perceived by staff. Participants rated leaders' effectiveness on a four-item subscale proposed by Bass and Avolio (1994), using a five-point Likert scale, ranging from 5 = frequently, if not always, to 1 = not at all. Sample item: "My principal is effective in meeting organizational requirements" (α = .76).

Student achievement. Test scores represent a non-perceptual indicator of leaders' effectiveness. The scores were obtained from the national achievement assessment in math for 5th graders (the *Meitzav* test), administered by the Ministry of Education. The grades represent the average achievement of the school, on a scale of 0 to 100.

School climate by students. The *Meitzav* data included student perceptions of eight indicators of climate and pedagogical environment (other indicators, less relevant to this study, such as those dealing with the prevalence of online tutoring, were not included). The *Meitzav* scores represent student agreement with the indicators (the ratio of students who assigned scores of 4 or 5 on the 5-point Likert scale). I conducted an exploratory factor analysis (EFA) to test the structure of the data. Items that loaded on multiple factors were omitted from the analyses. The final EFA, with 5 items, revealed two factors with eigenvalue greater than 1, explaining 85.23% of the variance. Following Cohen, McCabe, Michelli, and Pickeral's (2009) work on school climate (SC), I referred to these factors as the SC-safety and the SC-

relationships and teaching dimension. The SC-relationships and teaching dimension showed excellent Cronbach's reliability (α = .89). Following Eisinga, Grotenhuis, and Pelzer's (2013) recommendation to use Spearman-Brown reliability when testing a two-item scale, I calculated Spearman-Brown reliability for the SC-safety dimension, and found that it was .70, which is considered acceptable (Kaufmann & Vosburg, 1997; Nunnally, 1978).

Challenging circumstances. Earlier research has focused on schools operating in challenging circumstances (e.g., Hargreaves & Harris, 2015; Harris, 2002), but these qualitative case studies lacked systematic logic in defining the multiple aspects of challenging circumstances. For example, although challenging circumstances are characterized by an array of complex aspects, some works identified schools based on a single criterion or on a small number of criteria. A quantitative exploration of challenging circumstances is an opportunity to investigate the phenomenon methodically, using individual indicators assembled into a single composite index that better summarizes "complex, multi-dimensional realities" (OECD, 2008, p. 3). Based on the review of definitions in Table 1 above, I produced a detailed list of indicators for the purposes of the present study, which included the following aspects: (a) school ratio of students from low-income homes (%), (b) school ratio of students who migrated to the country in the last five years (%), (c) school ratio of students from single-parent families (%), (d) school average of parents' education (years), (e) school with a predominant (above 70%) student population of non-hegemonic ethnicity (1-predominant, 0-non-predominant), (f) unemployment rate at municipal level (%), (g) rate of welfare recipients at municipal level (%), and (h) municipality type (1-urban, 2-large rural, 3-small rural). Indicator data were obtained from several sources: the *Meitzav* database (1); school records (2-5); the National Social Security Agency

database (6-7); and the Central Bureau of Statistics database (8).

Demographic variables. Principals and teachers were asked to report their age, gender, education, and tenure in the public system.

3.4 Analytic strategy

Preliminary analyses included three stages. First, following recommendations in the literature on the construction of composite indices, I conducted a *k*-means cluster analysis procedure (OECD, 2008) to classify schools using multiple indicators linked with challenging circumstances. *K*-means, an iterative partitioning method, is the most widely used clustering procedure (Hung, Wu, Chang, & Yang, 2005). Because the focus of the present work is on comparing schools facing *more* challenging circumstances with those facing *less* challenging ones, the number of subgroups (i.e., clusters) was set to two. The procedure assigns cases to subgroups with the aim of maximizing between-clusters variance and minimizing within-cluster variance (Everitt, 1993). I used independent t-tests to explore the differences between clusters on the various indicators and demographic variables.

Second, I performed confirmatory factor analyses (CFAs) at the individual level of analysis, using the AMOS 22 software. In all analyses, I used maximum likelihood estimation and consulted a range of indices to determine fit. Among the fit indices used were chi-square test ($\chi 2$), root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), and Bayesian information criterion (BIC). Furthermore, because both principals' leadership styles and their perceived effectiveness were assessed by single-source self-report measures, there was a need to explore the degree to which common-method variance may have affected the measurements. To determine the scope of method variance in the data

collected, I used a latent factor technique recommended in the literature (Podsakoff, MacKenzie, & Podsakoff, 2012; Williams, Gavin, & Williams, 1996).

Third, because the study focused on principals and schools, I calculated intraclass correlation coefficient 1 (ICC(1)) for principals' leadership styles and their perceived effectiveness, and conducted an ANOVA analysis to test whether these variables aggregate significantly by organizational units (Bliese & Halverson, 1998).

The main analysis focused on the research question. To explore the moderating effects of the degree of challenging school circumstances on the relationships between principals' leadership styles and their effectiveness, I conducted a multi-group analysis following Eberl's (2010) recommendation. To this end, I used a structural equation modeling procedure called partial least squares (PLS; see Wold, 1985). PLS is considered suitable for testing structural models in leadership studies with a small sample size (see, for example Bass, Avolio, Jung, & Berson, 2003), because it is less restrictive in its assumptions (there are no prerequisites for data distributions and observation independence) (Barclay, Higgins, & Thompson, 1995). I created the theoretical path model using SmartPLS 3.2.1 (Ringle, Wende, & Will, 2005), by loading the mean scores of the variables of interest as indicators. The multi-group analysis in PLS (MG-PLS) used a bootstrapping method of 5,000 resamples, to obtain more robust estimates.

4. Results

4.1 Preliminary analyses

The results of the cluster analysis appear in Table 2. The table shows the means and interquartile ranges of the two clusters.

Table 2. Results of the K-means analysis

Indicators	Schools with *more* challenging circumstances (N=15)		Schools with *less* challenging circumstances (N=46)	
	Mean (*SD*)	Interquartile range (Q_1-Q_3)	Mean (*SD*)	Interquartile range (Q_1-Q_3)
School ratio of students' from low income homes (%)	35.19 (23.80)	17.39-60	10.48 (12.19)	7.69-16.66
School ratio of students' who migrated to the country in the last 5 years (%)	20.54 (10.78)	10-30	3.98 (5.58)	0-5
School ratio of students' from single-parent families (%)	40.77 (17.89)	30-50	11.02 (9.73)	5-15
School average of parents' education (years)	6.91 (4.05)	4.23-9.88	12.63 (3.34)	11.12-14.35
Schools with student population of predominantly (>70%) non-hegemonic ethnicity (1-predominant, 0-non predominant)	[33.3% predominant]	--	[19.1% predominant]	--
Unemployment rate at municipal level (%)	.90 (.31)	.70-1.10	.83 (.28)	.75-1.00
Rate of welfare recipients at municipal level (%)	1.09 (.61)	.70-1.50	.87 (.72)	.20-1.60
Municipality type (1-urban, 2-large rural, 3-small rural)	[100% urban]	--	[76.6% urban]	--

Note. In categorical variables, percentages of the category of interest are presented in rectangular brackets.

In general, the cases in each cluster are homogeneous, and the interquartile range of most indicators is narrow. I conducted independent t-tests to confirm that this classification was meaningful. The results show that the two groups differ significantly on means across most indicators of challenging circumstances (*p*s <.05), except three (schools with a student population of predominantly non-hegemonic ethnicity, unemployment rate at municipal level, and rate of welfare recipients at municipal level). Overall, the results support the finding that each cluster is unique, and the classification of schools by degree of challenging circumstances appears to indicate greater socio-economic complexity in *more* challenging schools than in *less* challenging ones. I also conducted independent t-tests to determine whether the two groups differ in demographic background variables. Analyses indicate three differences: in schools with *more* challenging circumstances the ratio of female teachers was higher (*M* = 98%), teachers were older (*M* = 43.71), and had more teaching experience (*M* = 19.15) than in schools with *less* challenging circumstances (*M* = 93%, *M* = 41.31, and *M* = 16.40 respectively) (*p*s < .05).[2]

Second, I conducted a series of CFAs to examine the factorial structure of the MLQ and to explore the possibility of common method bias. In a recent work, a three-factor structure of MLQ was found to be most fitting when modeling teachers' perceptions of principals' leadership styles (Menon, 2014). I tested the three-factor

[2] Previous research indicates that gender differences do not affect the ranking of managers' leadership styles (Maher, 1997). Although a recent meta-analysis found that in organizations in which a specific gender dominance exists, there are gender differences in perception of the leaders' effectiveness, the ratios found in both contexts of the present study (98% female vs. 93% female) are much higher than the minimal ratio reported to influence the ranking of the leaders' effectiveness (68.4% female) (see Paustian-Underdahl, Walker, & Woehr, 2014). Hence, any possible effect of gender difference on leaders' effectiveness is likely to have a largely similar effect on more and less challenging circumstances.

structure[3] (Model CFA1) in the entire sample and found the fit indices to be less than acceptable. After examining the model and checking the modification indices, I removed two items, one from TL and one from PAS, and correlated sets of errors to improve the model fit based on recommendations by the software. The adapted model, Model CFA2 (TL:15 items, α = .90, TA: 4 items, α = .71, and PAS: 7 items, α =.79), indicated a good fit (χ^2 (*df)* = 873.19 (315), $p < .01$; CFI = .91; TLI = .89; RMSEA = .05; BIC = 1272.96). The reliabilities resemble those reported in earlier research (e.g., Nir & Hameiri , 2014). These were non-nested models, and a comparison of BIC indices clearly indicates the superiority of the adapted model. Next, the adapted CFA model of the MLQ was fitted separately to each of the two sub-samples. The three-factor model in schools facing challenging circumstances, i.e., CFA2a, indicated a satisfactory fit (χ^2 (*df)* = 578.36(315), $p < .01$; CFI = .924; TLI = .92; RMSEA = .05; BIC = 849.10), and model CFA2b, in schools facing less challenging circumstances, indicated less than acceptable fit. Following the software recommendations, three sets of errors were correlated with TL items in model CFA2b1 that indicated a good fit (ΔBIC = 51.31; χ^2 (*df)* = 598.79 (312), $p < .01$; CFI = .92; TLI = .90; RMSEA = .05; BIC = 1140.82). Because both leadership styles and perceived effectiveness were assessed by single-source self-report measures, I performed a *post hoc* structural equation modelling comparative analysis to determine the scope of common method variance in the data. First, I explored a measurement model outlining the factor structure of leadership styles and principals' perceived effectiveness. In the second model, all items were loaded, in addition to their

[3] Two components, attributed idealized influence and contingent reward, which appear in the TL factor in Menon's (2014) model, were not included in the model because they have been sharply criticized in the literature for their confounding effects and lack of theoretical relation to TL (Van Knippenberg & Sitkin, 2013). The three-factor structure of MLQ, with a slim TL factor, has already been adopted in previous school leadership studies (Eyal & Kark, 2004; Nir & Hameiri, 2014).

respective theoretical factors, on a latent factor representing the method. The results of the comparison indicated that the method factor did not significantly improve the measurement model fit ($\Delta\chi^2 = 32.12$, $\Delta df = 27$, $p > .10$), and that the method factor alone explained a small part of the variance (16%), which was less than the problematic 25% level (see Williams, Cote, & Buckley, 1989). Thus, the comparison suggests that common method variance had no substantial effect on the present data.

Third, I calculated ICC(1) values to explore the possibility of aggregation. The ICC(1) values (TF = 0.23, TA = 0.11, PAS = 0.19, perceived leadership effectiveness = 0.17) showed that significant proportions of variance in these variables can be accounted for by school membership. ANOVA analysis indicated that perceptions at the individual level of analysis of these variables are grouped significantly by schools ($p < .001$). These results are similar to those reported previously about principals' leadership styles (Eyal & Kark, 2004), and together with the relevant literature, they provide support for aggregation (see Bliese, 2000). Therefore, scores were aggregated to group level means representing the principals.

4.2 Testing the hypotheses

After completing the preliminary analyses, I examined the research question. To explore the implications of the moderating effect of challenging school circumstances on the relations between leadership styles and leadership effectiveness in a manner that enables comparison, I conducted an MG-PLS analysis to test the explanatory power of the three leadership styles together. The MG-PLS analysis included estimation of standardized coefficients per context as well as per both more and less challenging school circumstance levels (see Table 3).

Table 3. Results of the MG-PLS analysis

Factors			Challenging school circumstances				Path coefficient differences (p-Value)
			More (N= 15)		*Less* (N= 46)		
			Estimate	p-Value	Estimate	p-Value	
Principal's transformational leadership	→	Principal's perceived effectiveness by staff	0.771***	0.000	0.744***	0.000	0.027 (0.410)
Principal's transactional leadership	→		0.369*	0.034	0.023	0.730	0.346* (0.030)
Principal's passive leadership	→		-0.165	0.213	-0.213†	0.082	0.049 (0.384)
Principal's transformational leadership	→	Student achievement	0.234	0.526	0.313	0.123	0.079 (0.548)
Principal's transactional leadership	→		0.006	0.991	-0.073	0.687	0.079 (0.408)
Principal's passive leadership	→		-0.021	0.957	0.507*	0.026	0.528 (0.872)
Principal's transformational leadership	→	School climate by student safety	-0.420	0.246	0.397	0.174	0.817* (0.048)
Principal's transactional leadership	→		0.298	0.404	0.046	0.790	0.253 (0.767)
Principal's passive leadership	→		0.084	0.788	0.337	0.320	0.253 (0.257)
Principal's transformational leadership	→	School climate by student relationships and teaching	-0.100	0.756	0.128	0.514	0.227 (0.747)
Principal's transactional leadership	→		0.580†	0.076	-.0006	0.973	0.586† (0.059)
Principal's passive leadership	→		-0.016	0.971	0.241	0.238	0.257 (0.724)

Note. 5,000 bootstrapping resamples. † $p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Figure 1 presents the standardized coefficients for the analysis by degree of challenge posed by school circumstances. Note that none of the demographic variables, including those that are different in the two contexts, predicted outcomes

significantly, and for the sake of parsimonious presentation were omitted from the figure.

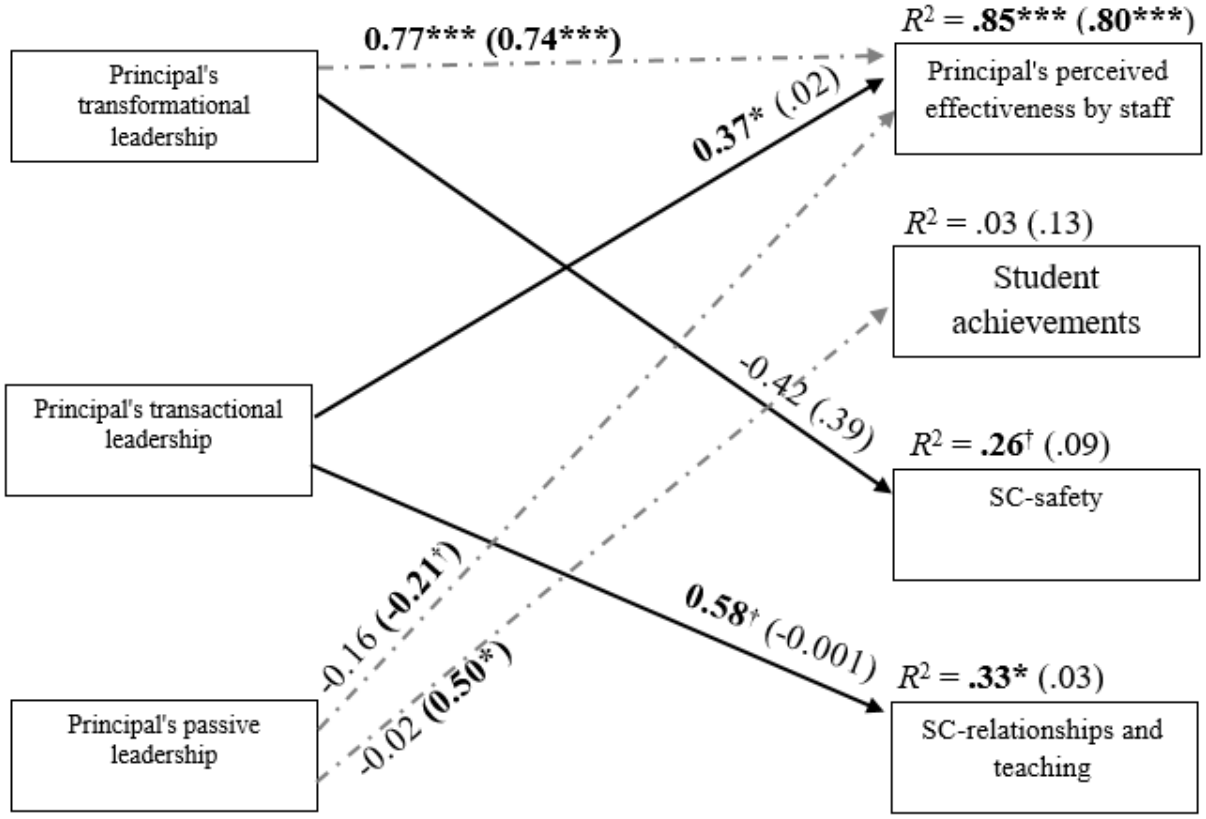

Figure 1. Results of the MG-PLS analysis (5,000 bootstrapping resamples). SC= school climate. Values without parentheses represent results for schools facing *more* challenging circumstances (N= 15); values in parentheses represent results for schools facing *less* challenging circumstances (N=46). Solid line represents significant differences between coefficients across groups. Bold values represent significant path coefficients or R^2. Paths that were non-significant in both groups and did not produce a difference between coefficients across groups were omitted from the presentation for the sake of parsimony. Demographic variables did not significantly predict outcomes, and were therefore omitted from the presentation. † p <.10; *p <.05; **p <.01; ***p <.001.

The model reveals a significant difference between the path coefficients of principals' transactional behaviors and their perceived effectiveness by staff, as a

function of challenging school circumstances (0.34, $p < .05$). In schools facing *less* challenging circumstances, the relationship between principals' transactional behaviors and their perceived effectiveness was non-significant ($\beta = 0.02$, $p > .05$), whereas in schools facing *more* challenging circumstances, the relationship was significantly positive ($\beta = 0.37$, $p < .05$). The model also indicated a marginally significant difference between the path coefficients of principals' transactional behaviors on one hand, and SC-relationships and teaching dimension reported by students on the other, as a function of the level of challenge posed by school circumstances (0.58, $p < .10$). In schools facing *less* challenging circumstances, the relationship between principals' transactional behaviors on one hand and SC-relationships and teaching dimension on the other was non-significant ($\beta = -0.01$, $p > .05$), whereas in schools facing *more* challenging circumstances, the relationship was positive at a marginally significant level ($\beta = 0.58$, $p < .10$). The model also revealed a significant difference between the coefficients of principals' transformational behaviors and the SC-safety dimension reported by students, as a function of challenging school circumstances (0.81, $p < .05$). Although both coefficients were non-significant (ps $> .05$) in each context, their direction was opposite: in schools facing *less* challenging circumstances, the relationship between principals' transformational behaviors and the SC-safety dimension was positive ($\beta = 0.39$), whereas in schools facing *more* challenging circumstances, this relationship was negative ($\beta = -0.42$). Two additional findings emerged: in schools facing *less* challenging circumstances, principals' passive behaviors were significantly positively related to students' achievements ($\beta = 0.50$, $p < .05$) and marginally negatively related to principals' perceived effectiveness by staff ($\beta = -0.21$, $p < .10$). The differences between groups for these coefficients were non-significant, and therefore caution

should be exercised in interpreting them. Because differences emerged in the relations between styles and outcomes, I also conducted *post hoc* independent t-test analyses to determine whether the frequency of principals' leadership styles varies by degree of challenging context, but the differences in frequency were non-significant (*p*s > .05).

5. Discussion

The present study explored challenging circumstances as a moderator of the association between principals' leadership styles and their effectiveness. The findings indicate that generic mainstream claims about the universality of leadership styles with regard to their effectiveness and their internal hierarchy in producing effectiveness (e.g., Menon, 2014; Nir & Hameiri, 2014) are unsupported when the degree of socio-economic challenging circumstances is incorporated in the model.

The study has several theoretical implications. First, the findings emphasize that socio-economic context plays a role in shaping teachers' implicit expectations about the leader's effectiveness. The present exploration suggests that teachers' expectations of principals to be transformational leaders are present in all circumstances, but their expectation of principals to adopt a transactional or a passive style is context-dependent. In schools facing *less* challenging circumstances, principals' passive behaviors were more likely to have negative implications for their image, as perceived by the staff. This finding suggests that in complex leadership situations, when most individuals acknowledge that the deck is stacked against the leader's success (Berkovich, 2014), passivity is less likely to reflect negatively on the leader's image. By contrast, in schools facing *more* challenging circumstances, principals' transactional behaviors were more likely to have positive implications for their image, as perceived by the staff, suggesting that in complex leadership

situations, individuals value more a hands-on style that is initiating structure (Judge, Piccolo, & Ilies, 2004). These results are consistent with categorization theory, which suggests that followers use implicit leadership expectations to make sense of leader behaviors (Humborstad & Giessner, 2015). The centrality of followers' and other stakeholders' expectations of principals in defining effectiveness is not a common focus in school leadership and effectiveness research, despite accumulated evidences of its importance in organizational behavior (Shondrick, Dinh, & Lord, 2010). In this regard, it is important to note the role of societal values on employees' implicit expectations (Yeo, Wildman, & Choi, 2017), which may also shape expectations that vary with context. Further research on this topic is recommended.

Second, the findings emphasize that socio-economic context plays a role in shaping the relationships between principals' leadership styles and school outcomes. Our finding that transactional leadership positively explains SC relationships and teaching dimension stresses the importance of transactional leadership for outcomes in schools facing *more* challenging circumstances. This finding further supports the idea that monitoring behaviors and hands-on leadership in difficult settings is not only expected and valued by teachers, but also produces positive outcomes. The finding echoes the notion of “tough love,” suggesting that strictness may be a positive approach that expresses care (Goldstein & Lake, 2000); it also provides support for earlier qualitative works suggesting that principals often use monitoring behaviors in complex circumstances, and explains why these behaviors are perceived by interviewees and observers as contributing to effective schooling (Harris, 2002; Harris et al., 2006). Transformational leadership in schools facing *more* challenging circumstances emerged as marginally negatively indicative of students' sense of safety, possibly suggesting that exclusive reliance on visionary, stimulating, and

considerate leadership behaviors to promote discipline in challenging circumstances is not advisable.

The findings also show that in schools facing *less* challenging circumstances, principals' passive behaviors can improve students' math achievement. The scope of the explained variance in student achievement is similar to that reported in previous works, which found that leadership explains 5-7% of the difference in scores across schools (Leithwood, Harris, & Hopkins, 2008, p. 28). Nevertheless, this proportion is meaningful as it amounts to one quarter of the total difference across schools in student achievement linked to school-level variables (Leithwood et al., 2008). This finding requires some conjecturing. I suggest that low proactivity of principals in *less* challenging circumstances enhances parental involvement, which in turn enhances student performance. Manasse (1985) argued that "[p]rincipals shape community and parent expectations, channel parent participation into acceptable, nondisruptive avenues of service and disarm volatile critics" (p. 447). Empirical research supports this claim and has found that principals play a key role in coordinating parental involvement in schools (Risimati, 2009). The importance of principals' proactivity in coordinating parental involvement is central in schools serving high SES families, whereas in schools serving low SES families parental involvement is usually low (Sanders & Simon, 2002). For example, Addi-Raccah and Grinshtain's (2016) survey of Israeli state primary schools found that 20% more parents belonging to schools serving high SES families reported initiating contact with teachers than did parents belonging to schools serving low SES families. In schools serving a high SES population, parents have more educational, economic, and social capital to intervene and promote their demands, either as individuals or as an organized interest group (Addi-Raccah & Arviv-Elyashiv, 2008). In these circumstances, passive principals

fail to buffer parental pressures exerted on teachers, which in a test-performance policy environment, currently on the rise (Berkovich, 2014), are channeled foremost to measurable test achievements.

Lastly, the *post hoc* analyses indicated non-significant differences between the two circumstances in the means of leadership styles. Some scholars have suggested that context can motivate and stimulate leadership behaviors, arguing that leaders may adopt proactive behaviors if they identify situations in which great injustice occurs (Zembylas, 2010). The results of the present work suggest the opposite conclusion: educational leaders are not sufficiently reactive to context, and should strive for a better qualitative adaptation of their leadership styles. The principals' lack of reactivity to socio-economic factors warrants further exploration, particularly regarding the role that the selection and socialization of principals may play in the indifference to context. The lack of reactivity may be a product of the local context. Since 2008, there has been a massive restructuring of the processes of selection and training of principals in state schools in Israel, with previously decentralized schools becoming organized under a central agency and closely connected to national goals (Shaked, 2014). Since the beginning of the 21st century, Israel has adopted national educational policies that rely on performance-based assessment, a focus that has been incorporated in centralized principals' training and development programs (Berkovich, 2014). Such an environment of test-oriented accountability has been found to socialize new educators to prefer standardization and focus on test scores over differential goals linked to cultural and socio-economic responsiveness (Achinstein & Ogawa, 2012).

The study has important practical implications as well. First, the results can be used to guide hiring. Based on the present findings, committees responsible for the

recruitment and selection of principals would be well advised to develop a better understanding of the degree of challenge faced by a given school, and to use assessment tools to evaluate prospective principals' behavioral range and adaptivity. Second, school leadership development programs and professional associations are advised to modify their curriculum to include training of aspiring principals in different leadership styles. The literature suggests that individuals can learn to use more transformational or transactional behaviors (Bass & Riggio, 2006). Third, it is recommended that policymakers shape systemic policies and regulations that grant school leaders sufficient room to select and adapt their styles in a way that meets the needs of their school. Last, principals need to be aware of the leadership practices they apply and of the degree of challenge posed by the circumstances within which their schools operate.

The present study has several limitations. First, the differences between more and less challenging groups were not significant on three indictors (predominantly non-hegemonic ethnicity, unemployment, and rate of welfare recipients at municipal level). It is possible that the distinction between hegemonic and non-hegemonic ethnicities is not sensitive enough. An alternative would be to focus on the ethnic differences of parents or grandparents originating from developed vs. economically distressed countries, a distinction that emerged in previous research as being related to segregation lines in state primary schools in Israel (Fogel, 2011). The non-significance of the rates of unemployment and welfare at municipal level may have to do with broader processes, such as the dramatic drop in unemployment rate in Israel (Amit, 2017, August 21) and the massive cutback and reorganization in Israeli welfare services (Ben-Porat, 2005). The narrowing range may have reduced the effectiveness of these two indicators, and further exploration of these aspects is

needed. Second, the challenging circumstances that were the focus of the present study cannot be isolated from broader welfare policies that support disadvantaged groups; therefore, additional research in other countries is recommended. Third, with the passage of time leaders' behavior changes because it is related to the dynamics of relationships or to the multiple stages of the task at hand. Thus, the effectiveness of styles with respect to what may be termed a "the particular developmental stage of the school" (Chapman & Harris, 2004, p. 219) requires further exploration. Fourth, although the present study focuses on the relations between social behaviors and context, still it considers to a great extent individuals and context as separate entities, similarly to most mainstream positivist social psychology (Ibanez, 1991; Minton, 1984). It has been suggested that the idea that individuals can be construed separately from the context produces apolitical explanations of individuals and social behaviors that support the dominating social order (Burr, 1998; Sarason, 1981). Future work may consider using critical social psychology approaches (see Howarth, 2006; Rogers, 2003) that explore how specific knowledge about context is legitimized and how agency and resistance are shaped in the construction of leaders' self-identity.

6. Conclusion

The findings of the present study mark an important step forward in the much-needed integration between leadership research in education and the reality of schooling (Berkovich, 2016; Hallinger, 2018). The insights can be transferred to other popular models of leadership in the public sector. Further exploration of the interactions between various leadership models and challenging circumstances is greatly advised.

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