

The Relationship Between School Principals' Leadership Styles, School Culture and Organizational Change

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Abstract

The purpose of the study was to identify the relationship between the leadership styles of school principals, school culture and their organizational change management capacity according to the teachers' perceptions. In the study, a quantitative research design was employed during data collection and the analysis phases. The sample of the study comprises randomly selected 382 teachers working in North Cyprus, during the 2019-2020 school year. The leadership styles scale of school principals, the scale for school culture and the scale of the organisational change management were used as data collection tools. Pearson correlation, regression, and path analysis were used for analysing data in addition to descriptive statistics. It was found that school principals exhibit transformational leadership characteristics, the perception of school culture by the teachers is strong and the perception of the organisational change is a medium level. It was also found that there are significant relationships between leadership styles, school culture, and organisational change, along with transformational and transactional leadership styles of school principals, which significantly predicted school culture, and school culture, which significantly predicted all sub-dimensions of organisational change. School culture has a mediator effect on both leadership styles and all sub-dimensions of organisational change, except that transformational leadership has only fully mediation effect with evaluating stage of organizational change. This research reveals the presumptions that transformational leadership executed by the principals supports to a greater extent positive effect on the teachers rather than transactional leadership and to contribute positive school culture and strengthening of organisational change process of the educational institutions. The models suggested in the study show that school culture might be effective in reducing negative behaviours of the teachers regarding the organizational change. To cope with resistance, prevent or reduce opposite opinions and negative indications of each stage of organizational change, strengthening teachers with the help of school culture is required.

Keywords: Leadership Styles; Educational Administration; School Culture; Organizational Change; Teachers.

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INTRODUCTION

Today, contemporary educational organizations are under the pressure of change for educational sustainability and international competitiveness. These rapid changes, especially swift advancements in information and communication technologies, affect many structures and processes of educational organizations from the content and delivery of the education service to the educational administration. This new economic reality is the inevitability of organizational change. The lack of adaptability to educational changes or to be late in change has the potential to affect negatively on many upper systems such as economic and social can have devastating effects on education systems of countries. To surviving, overcoming change pressures and, meet the needs of the information age of the 21st century, educational organizations have to be more innovative, dynamic and proactive to improve core competence in the context of change which force school outcomes. One way to achieve these goals depends on the existence of an innovative, open to change, and strong leadership capacity. Besides using the human and material resources effectively, for the existence of school institutes and their sustainability Yukl (2008) suggests an effective leadership approach and a strong school culture which are compatible with the rapid change of the world. In this point, it is suggested that the school principals could play a critical role in organizational change based on school improvement.

Transformational and Transactional Leadership

The past decades years have witnessed considerable study in the field of leadership styles. In this recent period, leadership issue which is vital for today' organizational life and to sustain profitability, productivity, and competitive advantage (Lussier & Achua, 2007) has become such an overwhelming focus from researchers (Kumar & Kaptan, 2007).

Leadership is defined as the ability to mobilise a group of followers gathered for specific purposes, influence and motivate others to achieve organisational goals performing at a high level of commitment and using minimum force (Bass, 1985; Bass, 1999). The leadership can the capacity to influence the followers' perception of change depending on the dynamic role of the leadership styles during the whole process of the transformation (Cummings & Worley, 2001). On the other hand, a leader has long been perceived as the one who motivates followers to help attain the common goals that delivers his/her experiences by composing a synergy, drives organizational learning processes improving a shared vision, leads most of time the organization with unusual practices, promotes ongoing improvement, ensuring progress towards pre-determined goals, prepares them to all dimensions of organizational change by interacting with them, plays a key role and affects and directs the behaviours, beliefs and attitudes of the followers (Aydin, 2010; Bass, 1985).

This study is based on Bass's leadership model. One current approach revealed by Bass (1985) is transformational leadership and one other approach transactional leadership which are often presented as being at opposing ends of a spectrum. Burns (1978) explains transformational leadership as a process which goes beyond the straight forward exchange relationship between leaders and followers like as discerned in transactional leadership. Rather than paying attention specifically on direct coordination, control, and supervision of curriculum and instruction like transactional leadership, transformational leadership grounding in understanding the needs of individual staff, focuses on developing the organization's capacity to innovate, explores to establish the organization's capacity to picks out its goals, creates a sense of purpose that binds teacher together, starts creative tension (Senge, 1990) and promotes the development of changes to practices of teaching and learning (Hallinger, 2003). A vision which comes out a component of transformational leadership motivating people to higher levels of effort and performance plays a key role in the organizational change process (Bass, 1985; Fasola, Adeyemi, & Olewe, 2013; Hallinger, 2003). According to Tyssen, Wald, and Spieth, (2014), despite both styles of leadership focuses to achieve followers' performance and organizational goals, the basic difference between transformational and transactional leadership styles lies in goal and motivation approach.

Transformational leaders focus mainly their followers' thinking to be more creative and innovative, take risks for realising tasks in the organisation (Yukl, 2008), emphasize problem-solving

skills to find solutions to difficult problems, motivate and contribute to their followers' satisfaction by giving advice and support revealing an achievable vision emphasizing aspirant goals. They also pay attention to each individual's needs and take heed of actions related to moral values and beliefs (Antonakis, Avolio, & Sivasubramaniam, 2003). They often point out cooperation, collective task achievement, sharing experiences, control and freedom in decision-making (Liu & DeFrank, 2013) and delegation of the authority (Gong, Huang, & Farh, 2009). Several studies support that transformational leadership has an impact on teachers' perceptions of school climate, their commitment to change and teachers' perceptions of progress with implementing stage of organizational change (Bogler, 2001; Fullan, 2002; Hallinger, 2003). Evidence from early empirical research conducted by Leithwood and Jantzi, (2005) indicates the transformational leadership as a major factor influencing organizational learning in the school environments. Similarly, Basu and Green (1997), Afsar et al. (2014), and Krause, (2004) are found that transformational leadership is related to the followers' ability, creativity and willingness to innovative work behaviors. Thus, considerable evidence is put forward by researchers that transformational leadership have long been seen as successful under the same conditions basically as those encountered by schools selected for reform and change (Hallinger, 2003; Korkmaz, 2006; Leithwood & Jantzi, 2005). However, transactional leaders maintain control, monitor closely the performance of the followers, focus on the continuous accumulation of the productivity of employees clarifying followers' role, task requirements and expectations to followers providing them with material or rewards and overlap with creativity and transformation (Antonakis, Avolio, & Sivasubramaniam, 2003; Rowold & Schlotz, 2009). In the literature, research concerning with transactional leadership results is found contradictory. Afsar, Yuosre, Saeed, & Hafeez, (2016), and Cheng, Yang, & Sheu, (2014) put forward that transactional leadership is positively related to creativity. On the other hand, Öncer (2013) stated that it was no association with innovativeness. This may be occurred or explained by the power distance and organizational culture.

School culture

School organizations are composed of individuals who have different socioeconomic status, style of living, rules and values. Today, successful leaders have to care about school culture, pay attention to the pressures of change and holistically evaluate their organizations' environment. Specifically, the wide-angle view related to the school culture offers leaders a broader framework for a deeper understanding of school climate and complex relationships within the school organization.

Despite lacks a clear definition in the field of education, school culture is defined as a style of living organisations which differentiate between the societies and between the organisations (Katz & Kahn, 1977), and “deep patterns of values, beliefs, and traditions that have been formed throughout of [the school's] history” (Deal & Peterson, 1990; Schein, 2010). The notion of culture is intended to explain the character of the school as it reflects deep patterns of values, beliefs and traditions that have been composed over time. School culture is similarly defined by Stolp & Smith (1994) as the historically rooted and socially transmitted set of deep patterns of meaning including the norms, values, beliefs, ceremonies, rituals, traditions, and myths understood by principals, teachers, students and other stakeholders of the school community.

The interplay between leadership and culture which affect all aspects of the school are both complex and slippery concept in school environments. School culture shaped within the organization often demonstrates what people think, and how they behave. In this context, it is evident that school culture is linked with the aims and activities of the organisation and its management. Like many others organizations, schools have also their own unique culture that helps us comprehend the complex senses that work below the surface and are in the air of human groups and organizations (Deal & Peterson, 1990). Leadership style shapes culture and culture affects leaders. This means that school culture and leadership have the potential to, directly and indirectly, influence each other. Improving learning and teaching environments is part of the job of every school principals. At this point, school principals are expected to support and help develop a strong school culture where the students and teachers have a high motivation to learn and teach (Karadağ & Özdemir, 2015), sincere and honest relationships among school members and the sense of acting together (Kalkan, Altınay, Altınay,

Atasoy, & Dağlı, 2020). It is also expected from principals to transform the school into learning organisations and managing change.

Research on school improvement promote innovation, encourage change and take a risk and indicate to the main power of the culture in enhancing curriculum, instruction, professional development of human resources, and learning process (Smylie, 2009). It is evident that much research related school culture has been made within the effective school research literature and it is linked with the productivity and performance outcomes such as student achievement, teacher motivation, commitment, turnover, and organizational change. Avcı (2016) states that the school principal plays a vital role in sharing and growing the organizational culture. Kalkan, et al. (2020) are found that school culture has a partial mediator effect on the leadership styles and the organizational image. Moslehpour, Altantsetseg, Mou, & Wong (2019) noticed that the organizational climate and working style fully mediate the relationship between leadership style and job satisfaction. School culture research is meant that school principals have to raise the commitment of the school community to meet individual expectations and to create a positive school culture. Besides the challenge is real and daunting, school leaders have to take a risk and encourage organizational change building positive school culture.

Organisational change

Organizational change is inevitable. This is vital for school organizations. Hannan and Freeman (1984) accentuated that conducting radical changes in an organization's strategy and structure is crucial for avoiding the threats from surroundings. Due to tackling the challenges of the 21st century depending external factors such as a rapid change in the technology area and ever more dynamic environments, or internal factors, schools like others organizations are constantly confronted with the need to implement change in strategy, structure, process and their school climate. It is evident that school organizations which manage the organizational change and adapt to changing society become more resistant, sustainable and durable.

Organizational change is defined by Carnall (1986) as an attempt(s) to modify its structure, goals, technology, work tasks, activity, interpersonal and social dynamics. Most researchers expressed that the organizational change is concerned a transformation of an organization between two points in time. Poole and Ven (2004) defines it as a difference in form, quality, or state over time in an organizational entity.

Leadership and change are inextricably intertwined like two parts of a whole, and one is nothing without the other. The success of organizational change based on school fundamentally depends on school leaders. Today, for many leaders, managing change and changing attitudes or behaviour of followers comprising a distinct group of people differentiated according to the power, status, rewards and deprivations, is seen difficult like to break a custom or social habit (Lewin, 1947) below the surface. There is broad consensus within researchers that building the leadership capacity, school communities, learning organizations and sustainable education system based on quality is a critical area of action. To overcome and coping with inner resistance to change, it is required to build strong leadership and positive school culture. Successful leaders improve a readiness skill which is similar to Lewin's concept of unfreezing stage (Armenakis, Harris, & Mossholder, 1993). Readiness for change is related to deep understand the members' values, beliefs, attitudes and intentions towards the change approach. According to Lewin's change model, moving stage should be perceived as the process of starting the organizational change by passing a new system; de-freezing should be interpreted as the process of institutionalization and applications of the new system (Coban, Ozdemir, & J. Pisapia, 2019). The stages of organizational change in schools are revealed based on initiation, implementation, and incorporation according to Lewin (1947), Schein (1961) and Giacquinta (1973) in this study. Stage of initiation is described by activities such as defining the problem to be solved, preparing diverse possible solutions, and picking one of the innovations. Stage of implementation and incorporation respectively are characterized by the process such as to be an alteration of member' attitudes and behavior to the expectations, stabilization or routinization of the new behavior. It is known that the process of organizational change is complex and encircled by the apprehension toward

unanticipated results, turbulence barriers, counterproductive and problems, (Boga & Ensari, 2009) which are exhibited in the employees' behavior through aversion to change. At this point, school principals have to manage organizational change carefully and well, paying close attention to deviations, mistakes, or irregularities, and to intensify to perform corrections strengthen the existing structures and strategies.

It is evident that much research related to organizational change has been made in the literature. It is found linked with the leadership (Coban, Ozdemir, & J. Pisapia, 2019), organizational development (Tarraco, Hoover, & Knippelmeyer, 2005), school culture (Deal & Peterson, 1990), organizational success (Boga & Ensari, 2009), employees' stress and commitment (Vakola & Nikolaou, 2005), and job satisfaction (Yousef, 2016).

The outcomes related to the bilateral relationships between both leadership styles of research indicate that transformational and transactional leadership have an effect on school culture positively and there is a close relationship between school culture and an organisational change. Moreover, no research has been found that focuses on how the transformational and transactional leadership style performed by the school principals affect the school culture and all sub-dimensions of the organisational change. Therefore, it is expected that determining the mediator role of school culture between transformational and transactional leadership styles and organisational change could reveal more holistic results, interpretations and inferences, give new perspectives for educational administration area and researchers. The main purpose of this research is to identify the relationships between the transformational (TL) and transactional leadership (TSL) styles of principals, school culture and determining stage of organisational change (DSOCH), preparing stage of organisational change (PSOCH), implementing stage of organisational change (ISOCH), and evaluating stage of organisational change (ESOCH) according to the opinions of the teachers. Based on the above literature, we can assume that:

- i. Hypothesis 1: School culture mediates the relationship between TL styles of principals and DSOCH.
- ii. Hypothesis 2: School culture mediates the relationship between TL styles of principals and PSOCH.
- iii. Hypothesis 3: School culture mediates the relationship between TL styles of principals and ISOCH.
- iv. Hypothesis 4: School culture mediates the relationship between TL styles of principals and ESOCH.
- v. Hypothesis 5: School culture mediates the relationship between TSL styles of principals and DSOCH.
- vi. Hypothesis 6: School culture mediates the relationship between TSL styles of principals and PSOCH.
- vii. Hypothesis 7: School culture mediates the relationship between TSL styles of principals and ISOCH.
- viii. Hypothesis 8: School culture mediates the relationship between TSL styles of principals and ESOCH.

METHOD

This research, which examined the relationships between the TL and TSL of school administrators, school culture and the organizational change is performed in a relational survey model. The relational survey model is a model used to determine the presence or level of co-change with two or more variables (Karasar, 2009). The mediator role of the school culture in the relationship between the TL and TSL of school administrators and the organizational change is tested by forming two models based leadership style. The current study focused only as leadership styles on transformational and transactional leadership because of it was primarily founded on Bass (1985) formulation of

leadership theory, in terms of the distinction of the behaviors patterns, the power of leaders' effectiveness, hierarchical level, and applicability in any organization and numerous situation. In this scope, each leadership is designed as an independent variable, each factor of organizational change which is determining stage of organizational change, preparing stage of organizational change, implementing stage of organizational change and evaluating stage of organizational change is designed as a dependent variable and school culture is designed as both an independent and dependent variable.

Participants

The population of the study consists of 2171 teachers working in secondary schools in Northern Cyprus, during the 2019-2020 school year. All the participant teachers have participated voluntarily in the research. According to calculations, a sample of 327 is enough to meet the criteria of 95% of the population. In the selection of the sample, every school in the province of Lefkoşa, Gazimagusa, Girne, İskele and Güzelyurt was accepted as a cluster and 408 randomly selected teachers were reached with the disproportionate cluster sampling technique. Before carrying out analyses, all the questionnaires gathered from the participants were controlled if any of them were incomplete or imprecisely filled. Those of which are incomplete or imprecisely filled (left blank, patterned, all marked the same option, etc.) were opted out from the analyses. According to the process, 26 of the questionnaires were not taken into consideration because they did not meet the assumption (left blank, patterned, all marked the same option, outlier, etc.). Thus, 382 fully completed questionnaires were included in the analysis. A sample of 382 teachers comprises 56.3% (n = 215) women and 43.7% (n = 167) men. 56.5% (n = 216) of the sample works in middle schools, 43.5% (n = 166) of it works in secondary schools. Based on the level of education of teachers, 345 of them are graduated (% 90.3) and 37 of them postgraduate (% 9.7). 165 of the teachers (% 43.02) have 10 years or less professional seniority; 121 of teachers (% 31.7) have 11 – 20 years of professional seniority, and 96 of them (% 25.1) have 21 years or more professional seniority.

Data collecting tools

Data of the study is collected with three data collection tools: Multifactor leadership questionnaire (MLQ), school culture scale (SCS) and organizational change management scale (OCMS). The necessary permissions were obtained from the people who developed the scale by e-mail. Information on these data collection tools is given below.

MLQ developed by Bass (1985) and adopted by Demir and Okan (2008) which is suitable to set Turkish managers' leadership styles consists of 14 items and 2 sub-dimensions and is a 5-point Likert-type scale that ranges from strongly disagree to strongly agree. Cronbach's alpha values of the sub-dimensions of the 14-item MLQ were as follows: TL styles = .86; TSL styles = .70.2. In the adaptation study of the instrument, construct validity was re-established with Confirmatory Factor Analysis (CFA) and the goodness of fit values were reported as $\chi^2 / df (160,422/76) = 2.111$, GFI = .94, AGFI = .92, RMSEA = .054, CFI = .94, IFI = .94 and TLI = .93.

The SCS (Terzi, 2005) consists of 29 items. In this study, it is selected 10 items by researcher including each subscale. CFA was performed to test the construct validity of these 10 items. Factor analysis results are supported four sub-dimensions of original scale and sub-dimensions; support-oriented (3 items), bureaucratic (3 items), task-oriented (2 items) and success-oriented (2 items). The goodness of fit values were reported as $\chi^2 / df (41,890/29) = 1,444$, GFI = .97, AGFI = .96, RMSEA = .035, CFI = .97, IFI = .97 and TLI = .96. Cronbach's alpha values of the 10-items are calculated between .73.8 and 76.2 in the scope of the scale. This range is similar to the Cronbach's alpha values of the original scale developed by Terzi (2005) and performed by Koşar (2008). It is a 5-point Likert-type scale that ranges from strongly disagree and strongly agree.

The OCMS was developed by Ak (2006) and consists of 67 items and 4 sub-dimensions and is a 5-point Likert-type scale that ranges from strongly disagree and strongly agree. The Cronbach's

alpha value of the scale is calculated .78. In this study, it has selected 12 items by researcher including each subscale. The Cronbach Alpha internal consistency coefficients of the subscales range between .70 and .80. This range is similar to the Cronbach's alpha values of the original scale developed by Ak (2006). CFA was also performed to test the construct validity of these 12 items. Factor analysis results are supported four sub-dimensions of original scale; determining stage of organizational change (DSOCH), (3 items), preparing stage of organizational change (PSOCH), (3 items), implementing stage of organizational change (ISOCH), (3 items) and evaluating stage of organizational change (ESOCH), (3 items). For this study, the goodness of fit values were reported as χ^2 / df (150.573/48) = 3.137, GFI = .94, AGFI = .91, RMSEA = .070, CFI = .92, IFI = .92 and TLI = .89.

The data were collected in the fall term of the 2019 – 2020 educational year. The official permission from the TRNC Ministry of Education Directorates-General Secondary Education was obtained for the implementation of the scales mentioned above in the related schools. The scales were applied to the teachers. The data collection process was conducted on a voluntary basis. The scale application took 15 minutes on average.

Analysis of data

Data were analysed using SPSS for Windows 23 programme and AMOS 22. The data set was formed from the 382 data that were transferred to the computer. Frequency and percentage values were calculated to determine the demographic characteristics of teachers (gender, education level, seniority and tenure at the current school). In the analysis of the data, arithmetic means, standard deviation, frequency, Pearson correlation, regression, path analysis, Sobel, Aroian and Goodman test for significance were used. The arithmetic means were interpreting for transformational leadership, transactional leadership, school culture and organizational change, intervals between 1.00 – 1.79 were accepted as lowest, 1.80 – 2.59 were accepted as low, 2.60 – 3.39 were accepted as a medium, 3.40 – 4.19 were accepted as high, and 4.20 – 5.00 were accepted as very high. For the Pearson correlation analysis interpretation, the value 0.00 – 0.25 was accepted as a too weak relationship, 0.26 – 0.49 were accepted as the weak relationship, 0.50 – 0.69 were accepted as the medium relationship, 0.70 – 0.89 were accepted as the high relationship and 0.90 – 1.00 were accepted as the very high relationship.

Before analysing the data set, all data to be used in the research were examined to fix whether they met the assumptions of normality, missing values, outlier, multicollinearity problem and variance homogeneity. In this context, 4 outliers ($z \geq 3$) and 16 missing values, 4 left blank and 2 all marked the same option were found and removed from the analysis according to the frequency and Mahalanobis distances (Tabachnick & Fidell, 2013). To determine the existence of any multicollinearity problem, these questionnaires were examined based on collinearity statistics such as Tolerance, Variance Inflation Factor (VIF), Durbin Watson scores and Condition Index (CI). It is determined that Durbin Watson scores of all data range between 2.089 and 2.167 and VIF scores were found to be lower than 3. (1.630-2.550). In addition that, the tolerance values scores of the data range between .550 and .752 and the CI values were between 1.00, 15.52 according to the linear regression model. In this case, the multicollinearity assumptions were met for the independent variables and were found in acceptable range according to Kalaycı (2012), and Büyüköztürk (2009). Statistics for assessing the normality of the observed variables in all models were in the acceptable according to the Amos 22 program, using the normality check method. The analyses realised for the distribution of normality were also checked in SPSS 23 programme. Skewness and kurtosis values were found to be less than ± 1.5 . However, the kurtosis values for some variables (TLB ± 1.5) were found high, but in an acceptable range. The histograms, Q-Q graph distributions and scatter plot matrix were found normal. Tabachnick and Fidell (2013) considered the skewness and kurtosis values to be within ± 1.5 limits for normal distribution. Besides, it was evaluated all analysis above together and was decided the assumption of normal distribution (McKillup, 2012; Stevens, 2009).

AMOS 22 software was used for the structural equation modeling (SEM) analysis of the data. The correlations between latent variables were occurred according to Pearson Correlation Coefficients. The coefficients were determined to be sufficient, so the measurement and the structural models were tested using Maximum Likelihood Estimation technique and covariance matrix. In the mediation

effect analysis, the non-recursive causal model for determining a mediating model was used based on Baron and Kenny (1986) According to the assumptions of mediation models, first, the independent variables (TL and TSL) must affect the dependent variables (determining stage of organizational change, preparing stage of organizational change, implementing stage of organizational change, ESOCH). Secondly, the mediator (SC) must affect the dependent variable when the independent variable is controlled. Thirdly, the direct effect must be non-significant for a full mediated effect. After testing the models, it was seen that the basic assumptions for the mediation analysis were met. To determine the fit index of the model, Chi-Square/Degrees of Freedom) ratio ($\chi^2 / df \leq 3$) and the fit indicators such as RMSEA ($\leq .050$), NFI, CFI, GFI, AGFI, IFI, TLI ($\pm .85$) are also examined (Byrne, 2010; Kline, 2011; Tabachnick & Fidell, 2013). Therefore, the results of the Sobel, Aroian and Goodman tests and critical ratio which were performed for the significance of the mediating were used. The reported p-values of all tests such as Sobel, Aroian and Goodman tests were calculated from the unit normal distribution under the assumption of a two-tailed z-test of the hypothesis that the mediated effect equals zero. The critical values of the test ratio containing the central 95% of the unit normal distribution were produced according to the value ± 1.96 . The formulae for Sobel test which is $z\text{-value} = a*b/\text{SQRT}(b^2*sa^2 + a^2*sb^2)$, for Aroian test $z\text{-value} = a*b/\text{SQRT}(b^2*sa^2 + a^2*sb^2 + sa^2*sb^2)$, and for Goodman test $z\text{-value} = a*b/\text{SQRT}(b^2*sa^2 + a^2*sb^2 - sa^2*sb^2)$ were drawn according to Mackinnon & Dwyer (1993) and from MacKinnon, Warsi, & Dwyer (1995) and were calculated using an interactive calculation tool for mediation tests. Finally, direct, indirect and total effects amongst latent variables were estimated.

RESULTS

Descriptive statistics

As a descriptive statistics, it is presented the results of latent variables in Table 1. Means, standard deviation values and Pearson correlation of latent variables are reported in this part.

Table 1: Descriptive Statistics and Pearson Correlation Analysis Findings on Research Variables

	\bar{x}	SD	1	2	3	4	5	6	7
1. Transformational leadership	3.91	.40	-						
2. Transactional leadership	3.20	.34	.303**	-					
3. School culture	3.79	.34	.706**	.230**	-				
4. Determining stage of organizational change	3.12	.47	.453**	.227**	.410**	-			
5. Preparing stage of organizational change	3.07	.46	.500**	.266**	.446**	.729**	-		
6. Implementing stage of organizational change practice	2.96	.46	.412**	.201**	.447**	.495**	.575**	-	
7. Evaluating stage of organizational change	3.01	.45	.391**	.219**	.384**	.496**	.601**	.680**	-

**Correlation is significant at the 0.01 level (2-tailed).

Table 1 shows us that the perception of the teachers of TL styles ($\bar{x}=3.91; \pm .40$) and school culture ($\bar{x}=3.79; \pm .34$) are on a high level. However, their perception of the TSL styles ($\bar{x}=3.20; \pm .34$) and all sub-dimensions of organizational change management ($\bar{x}=3.12; \pm .47; \bar{x}=3.07; \pm .46; \bar{x}=2.96; \pm .46; \bar{x}=3.01; \pm .45$) are on medium level. There are positive correlations between latent variables ranging from .20 to .73. There is a high relationship between the TL and school culture ($r = .70$). There is also relationship at medium level between the TL and the sub-dimension of organizational change management, such as DSOCH ($r = .45$), PSOCH ($r = .50$), ISOCH ($r = .41$), ESOCH ($r = .39$). Despite that, there are also a low level relationship between the TSL and school culture ($r = .23$) and along with all the other sub-dimensions ranging from .20 to .27. In addition to this, it is found that there is relationship at medium level between SC and the sub-dimensions of organizational change.

Measurement Model

Before the structural models were tested in the research, a measurement model based TL styles and TSL styles were examined including related to all variables in the structural models. In Table 2, the χ^2 , the degree of freedom, and other goodness of fit measures for the measurement model (RMSEA, NFI, CFI, GFI, AGFI, IFI, TLI, CMIN/DF) are reported according to the all hypotheses.

Table 2: Goodness of Fit Indices

Measurement Model	The Goodness of Fit Indices								
	χ^2/df	RMSEA	NFI	CFI	GFI	AGFI	IFI	TLI	CMIN/DF
TL→SC→DSOCH* (H ₁)	313,884/206	,037	,871	,951	,933	,917	,951	,945	1,524
TL→SC→PSOCH* (H ₂)	349,461/206	,043	,857	,935	,927	,911	,936	,927	1,696
TL→SC→ISOCH* (H ₃)	341,645/206	,035	,868	,953	,936	,921	,954	,948	1,464
TL→SC→ESOCH* (H ₄)	302,697/206	,035	,868	,953	,935	,920	,954	,947	1,469
TSL→SC→DSOCH (H ₅)	202,718/132	,037	,849	,941	,945	,929	,942	,931	1,536
TSL→SC→PSOCH (H ₆)	229,406/132	,044	,829	,918	,940	,922	,919	,905	1,738
TSL→SC→ISOCH (H ₇)	190,58/132	,034	,842	,945	,949	,933	,946	,936	1,440
TSL→SC→ESOCH (H ₈)	182,157/132	,032	,850	,953	,951	,937	,954	,945	1,380

Table 2 shows that all of the structural models analysed were found have good fit values. According to the goodness of fit indices for all related measurement models based on the TL styles and TSL styles are in the acceptable range. After that process, the structural model suggested in the research was tested based on the significance of the coefficients and the results were presented with the mediation analysis results in Table 3.

Table 3: Regression Results of the Models

	Variables		Models	β	SE	P
Hypothesis 1	TL	→ DSOCH	Model 1	0.492	0.074	0.001**
	SC	→ DSOCH	Model 2	0.557	0.091	0.001**
	TL	→ SC	Model 3	0.694	0.078	0.001**
	SC	→ DSOCH		0.311	0.132	0.018*
	TL	→ DSOCH		0.298	0.112	0.08**
Hypothesis 2	TL	→ PSOCH	Model 1	0.626	0.081	0.001**
	SC	→ PSOCH	Model 2	0.654	0.099	0.001**
	TL	→ SC	Model 3	0.694	0.078	0.001**
	SC	→ PSOCH		0.309	0.149	0.038*
	TL	→ PSOCH		0.415	0.127	0.001**
Hypothesis 3	TL	→ ISOCH	Model 1	0.568	0.081	0.001**
	SC	→ ISOCH	Model 2	0.632	0.099	0.001**
	TL	→ SC	Model 3	0.692	0.077	0.001**
	SC	→ ISOCH		0.414	0.148	0.005**
	TL	→ ISOCH		0.275	0.123	0.026*
Hypothesis 4	TL	→ ESOCH	Model 1	0.476	0.077	0.001**
	SC	→ ESOCH	Model 2	0.557	0.095	0.001**
	TL	→ SC	Model 3	0.690	0.078	0.001**
	SC	→ ESOCH		0.392	0.148	0.01**
	TL	→ ESOCH		0.199	0.122	0.104
Hypothesis 5	TSL	→ DSOCH	Model 1	0.345	0.090	0.001**
	SC	→ DSOCH	Model 2	0.557	0.091	0.001**
	TSL	→ SC	Model 3	0.381	0.092	0.001**
	SC	→ DSOCH		0.611	0.099	0.001**
	TSL	→ DSOCH		0.208	0.091	0.022*
Hypothesis 6	TSL	→ PSOCH	Model 1	0.438	0.112	0.001**
	SC	→ PSOCH	Model 2	0.653	0.099	0.001**
	TSL	→ SC	Model 3	0.381	0.092	0.001**
	SC	→ PSOCH		0.605	0.099	0.001**
	TSL	→ PSOCH		0.205	0.103	0.047*
Hypothesis 7	TSL	→ ISOCH	Model 1	0.379	0.104	0.001**
	SC	→ ISOCH	Model 2	0.632	0.099	0.001**
	TSL	→ SC	Model 3	0.381	0.091	0.001**

	SC	→	ISOCH		0.523	0.093	0.001**
	TSL	→	ISOCH		0.260	0.094	0.006**
Hypothesis 8	TSL	→	ESOCH	Model 1	0.383	0.099	0.001**
	SC	→	ESOCH	Model 2	0.557	0.095	0.001**
	TSL	→	SC		0.378	0.091	0.001**
	SC	→	ESOCH	Model 3	0.474	0.091	0.001
	TSL	→	ESOCH		0.214	0.094	0.023*

* $p < .05$, ** $p < .01$, ***All the values in the table are standardized beta coefficients (β).

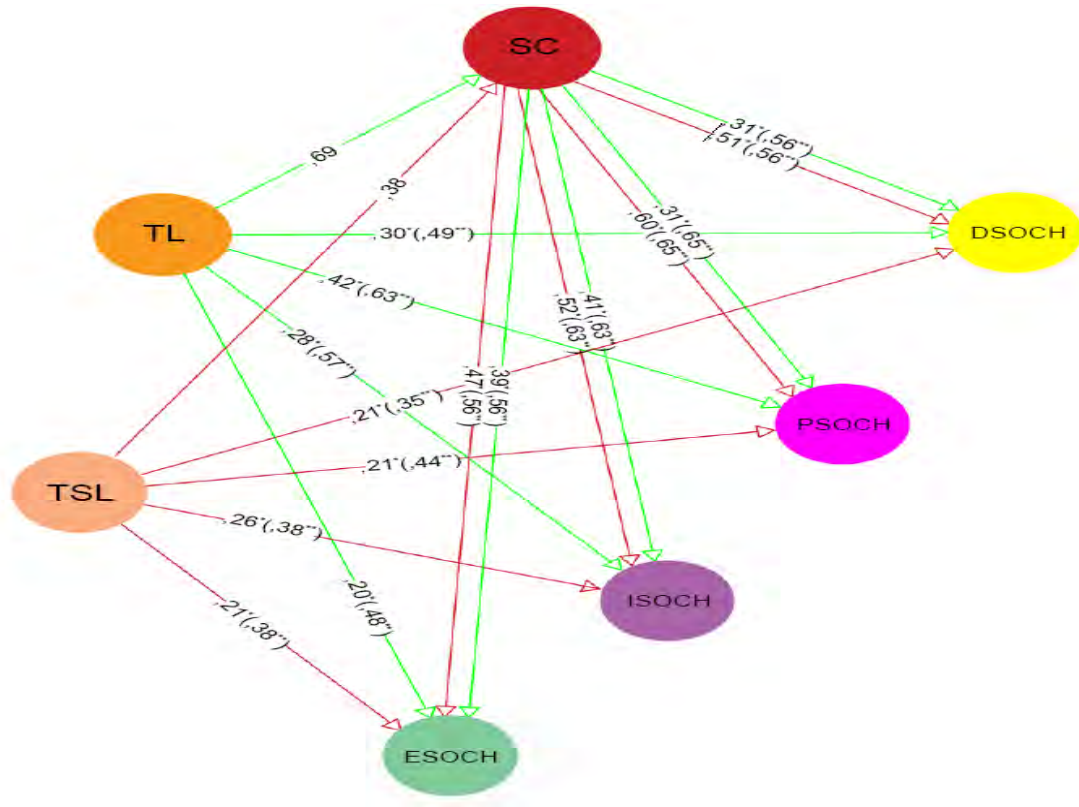


Figure 1: Mediation role of all hypothesis

***The coefficients in parentheses indicate direct effects before mediator. (* $p < .05$, ** $p < .01$)

As shown in Table 3 and Figure 1, the direct effects of the TL styles on DSOCH ($\beta = .49$, $p < .01$), PSOCH ($\beta = .63$, $p < .01$), ISOCH ($\beta = .57$, $p < .01$), and ESOCH ($\beta = .48$, $p < .01$) are found to be statistically significant before mediator variable according to the model 1. Similarly, the direct effects of TSL styles on DSOCH ($\beta = .35$, $p < .01$), PSOCH ($\beta = .44$, $p < .01$), ISOCH ($\beta = .38$, $p < .01$), and ESOCH ($\beta = .38$, $p < .01$) are found to be statistically significant according to the model 1. This means that it is possible to say that the independent variables have some statistically significant effects on all sub-dimensions of organizational change dependent variables. Secondly, the direct effects of TL styles ($\beta = .69$, $p < .01$) and TSL styles ($\beta = .38$, $p < .01$) on school culture are found statistically significant. Therefore, it can be interpreted that both independent variables have some effects on the mediator variable. Thirdly, according to the hypothesis 1, 2, 3 and 4 respectively, the direct effects of school culture on DSOCH ($\beta = .56$, $p < .01$), PSOCH ($\beta = .65$, $p < .01$), ISOCH ($\beta = .63$, $p < .01$), and ESOCH ($\beta = .56$, $p < .01$) are found to be statistically significant. Similarly, according to the hypothesis 5, 6, 7 and 8 respectively, the direct effects of school culture on DSOCH ($\beta = .56$, $p < .01$), PSOCH ($\beta = .65$, $p < .01$), ISOCH ($\beta = .63$, $p < .01$), and ESOCH ($\beta = .56$, $p < .01$) are found to be statistically significant. Therefore, the mediator school culture has an effects on all sub-dimensions of the organizational change without the independent variables of both leadership styles. In this context, related findings show that the mediation analysis in the model is suitable. Hence, the mediation role of school culture in the relationship between TL styles and TSL styles and determining stage of organizational change, preparing stage of organizational change, implementing stage of organizational change, and evaluating stage of organizational change are tested in the model.

As shown in Figure 1, and Table 3, the relationship between TL styles and DSOCH is statistically significant, and medium-level at first ($\beta = .49, p < .01$); but when the mediator variable is added into the model, the path coefficient is still significant despite the moderate decline ($\beta = .30, p < .05$). The probability of getting a critical ratio as large as 2,362 in absolute value is .018. In other words, the regression weight for TL styles in the prediction of DSOCH was found significantly different from zero. This means that school culture in the prediction of DSOCH has a partially mediated effect on the relationship between TL styles and DSOCH. Z score obtained from Sobel test ($z = 2.227; p = .022$), z score from Aroian ($z = 2.264; p = .023$), and z score from Goodman test ($z = 2.291; p = .021$) support also this finding.

As seen in Figure 1, and Table 3, the relationship between TL styles and PSOCH is statistically significant, and medium-level at first ($\beta = .63, p < .01$); but when the mediator variable is added into the model, the path coefficient is still significant despite the moderate decline ($\beta = .42, p < .05$). The probability of getting a critical ratio as large as 2,073 in absolute value is .038. In other words, the regression weight for TL styles in the prediction of PSOCH was found significantly different from zero. This means that school culture in the prediction of PSOCH has a partially mediated effect on the relationship between TL styles and PSOCH. Sobel test z score ($z = 2.09; p = .043$), Aroian test z score ($z = 2.00; p = .044$), and Goodman test z score ($z = 2.03; p = .042$) support also this finding.

As shown in Figure 1, and Table 3, the relationship between TL styles and ISOCH is statistically significant, and medium-level at first ($\beta = .57, p < .01$); but when the mediator variable is added into the model, the path coefficient is still significant despite the moderate decline ($\beta = .28, p < .05$). The probability of getting a critical ratio as large as 2,796 in absolute value is .005. In other words, the regression weight for TL styles in the prediction of ISOCH was found significantly different from zero. This means that school culture in the prediction of ISOCH has a partially mediated effect on the relationship between TL styles and ISOCH. Z score obtained from Sobel test ($z = 3.446; p = .007$), z score from Aroian ($z = 2.655; p = .007$), and z score from Goodman test ($z = 2.686; p = .007$) support also this finding.

The relationship between TL styles and ESOCH is statistically significant, and medium-level at first ($\beta = .48, p < .01$); when the mediator variable is added into the model, the path coefficient decreases and it becomes non - significant ($\beta = .20, p > .05$). Z score obtained from Sobel test ($z = 3.163; p = .001$), z score from Aroian ($z = 3.124; p = .001$), and z score from Goodman test ($z = 3.203; p = .001$) support also this finding. This means that school culture in the prediction of ESOCH has a full mediated effect on the relationship between TL styles and ESOCH.

As shown in Figure 1, and Table 3, the relationship between TSL styles and DSOCH is statistically significant, and medium-level at first ($\beta = .35, p < .01$); but when the mediator variable is added into the model, the path coefficient is still significant despite the moderate decline ($\beta = .21, p < .05$). The probability of getting a critical ratio as large as 5,668 in absolute value is .0001. In other words, the regression weight for TSL styles in the prediction of DSOCH was found significantly different from zero. This means that school culture in the prediction of DSOCH has a partially mediated effect on the relationship between TSL styles and DSOCH. Z score obtained from Sobel test ($z = 3.343; p = .0008$), z score from Aroian ($z = 3.310; p = .0009$), and z score from Goodman test ($z = 3.378; p = .0007$) support also this finding.

As shown in Figure 1, and Table 3, the relationship between TSL styles and PSOCH is statistically significant, and medium-level at first ($\beta = .44, p < .01$); but when the mediator variable is added into the model, the path coefficient is still significant despite the moderate decline ($\beta = .21, p < .05$). The probability of getting a critical ratio as large as 5,610 in absolute value is .0001. In other words, the regression weight for TSL styles in the prediction of PSOCH was found significantly different from zero. This means that school culture in the prediction of PSOCH has a partially mediated effect on the relationship between TSL styles and PSOCH. Z score obtained from Sobel test ($z = 3.428; p = .0006$), z score from Aroian ($z = 3.397; p = .0006$), and z score from Goodman test ($z = 3.460; p = .0005$) support also this finding.

As seen in Figure 1, and Table 3, the relationship between TSL styles and ISOCH is statistically significant, and medium-level at first ($\beta = .38, p < .01$); but when the mediator variable is added into the model, the path coefficient is still significant despite the moderate decline ($\beta = .21, p < .05$). The probability of getting a critical ratio as large as 5,610 in absolute value is .0001. In other words, the regression weight for TSL styles in the prediction of ISOCH was found significantly different from zero. This means that school culture in the prediction of ISOCH has a partially mediated effect on the relationship between TSL styles and ISOCH. Z score obtained from Sobel test ($z = 3.358; p = .0007$), z score from Aroian ($z = 3.324; p = .0008$), and z score from Goodman test ($z = 3.392; p = .0006$) support also this finding.

As stated in Figure 1, and Table 3, the relationship between TSL styles and ESOCH is statistically significant, and medium-level at first ($\beta = .38, p < .01$); but when the mediator variable is added into the model, the path coefficient is still significant despite the moderate decline ($\beta = .21, p < .05$). The probability of getting a critical ratio as large as 5,220 in absolute value is .0001. In other words, the regression weight for TSL styles in the prediction of ESOCH was found significantly different from zero. This means that school culture in the prediction of ESOCH has a partially mediated effect on the relationship between TSL styles and ESOCH. Z score obtained from Sobel test ($z = 3.161; p = .001$), z score from Aroian ($z = 3.125; p = .001$), and z score from Goodman test ($z = 3.199; p = .001$) support also this finding.

The direct, indirect, total effects and Variance Account For value (VAF) which indicates whether there is a mediation effect and determines the extent to which the mediation process explains the dependent variable's variance are also calculated to see the power and level of relationships among the variables (Hadi, Abdullah, & Setosa, 2016; MacKinnon, 2008).

Table 4. Direct, Indirect, and Total Effect Coefficients of the Latent Variables*.

Dependent	Direct	Indirect	Total	VAF	Dependent	Direct	Indirect	Total	VAF
TL→SC→DSOC	.298	.215	.513	.42	TSL→SC→DSOC	.208	.232	.440	.53
TL→SC→PSOC	.415	.214	.629	.34	TSL→SC→PSOC	.205	.230	.435	.53
TL→SC→ISOC	.275	.286	.561	.51	TSL→SC→ISOCH	.260	.199	.459	.43
TL→SC→ESOCH	.199	.270	.393	.69	TSL→SC→ESOCH	.214	.180	.394	.46

*All the values of direct, indirect and total effects in the table are standardized beta coefficients.

According to Table 4, TL has a medium direct effect on DSOCH ($\beta = .30, p < .01$), PSOCH ($\beta = .42, p < .01$) and low direct effect on ISOCH ($\beta = .28, p < .01$) when the variables are added in the model. However, the total mediated effects and VAF values of DSOCH ($\beta = .51, p < .01$; VAF = .42), PSOCH ($\beta = .63, p < .01$; VAF = .34) and ISOCH ($\beta = .56, p < .01$; VAF = .51) have a significant contribution on TL and show partial mediator roles in the relationship between TL and DSOCH, PSOCH and ISOCH. Therefore, TL has a low direct effect on ESOCH ($\beta = .20, p > .01$) when the independent variables are in the model. The total mediated effect and VAF value of ESOCH ($\beta = .39, p < .01$; VAF = .69; $z = 3.163; p = .001$) has a significant contribution on TL and shows fully mediator roles in the relationship between TL and ESOCH. As seen in Table 4, TSL has a low direct effect on DSOCH ($\beta = .21, p < .01$), PSOCH ($\beta = .21, p < .01$), ISOCH ($\beta = .26, p < .01$) and ESOCH ($\beta = .21, p > .01$) when the variables are added in the model. However, the total mediated effects and VAF values of DSOCH ($\beta = .44, p < .01$; VAF = .53), PSOCH ($\beta = .44, p < .01$; VAF = .53) and ISOCH ($\beta = .46, p < .01$; VAF = .43), and ESOCH ($\beta = .39, p < .01$; VAF = .46) have a medium significant contribution on TSL and show partial mediator roles in the relationship between TSL and DSOCH, PSOCH, ISOCH and ESOCH.

DISCUSSION, CONCLUSION AND SUGGESTIONS

This study was aimed to determine the mediation effects of school culture on the relationship between both leadership styles (TL and TSL) and sub-dimensions of organizational change with respect to the perceptions of teachers. According to the results of the study, the transformational leadership style of the school administrators and school culture is found high and the level of

transactional leadership and determining stage of organizational change, preparing stage of organizational change, implementing stage of organizational change, and evaluating stage of organizational change is medium. Many previous studies in the literature (Afsar, Badir, Saeed, & Hafeez, 2016; Akan & Yalçın, 2015; Avcı, 2016; Buluç, 2009; Cemaloğlu, 2007; Erdem & Dikici, 2009; Korkmaz, 2006; Kalkan, Altınay, Altınay, Atasoy, & Dağlı, 2020; Mendel, Watson, & MacGregor, 2002; Saravo, Netzel, & Kiesewetter, 2017) on transformational and transactional leadership styles are similar to these results. It can be said that the perceptions of teachers related to these two leadership styles that focus on achieving organizational goals diverged in the context of arithmetic averages. So, it is supported the opinions related to the transformational leadership which contributes more than transactional leadership on the performances of the followers concerning the functionality of the organizational structures and process (Piccola & Colquitt, 2006; Pillai, Schriesheim, & William, 1999). Hartog, Muijen, & Koopman (1997) highlighted that the best of leaders are both transactional and transformational according to related research conducting since 1980. Bass (1985) states also that the circumstances did not differ for many situations, these two leadership styles consistently represent two opposite poles of a whole and the transactional leader works within the constraints of the organization whereas the transformational leader shares common goals and focuses more on the organizational change. So, a deeper understanding of the effectiveness of transformational - transactional leadership styles depending on changes of economic and social paradigm or under specific circumstances looks good on imperative.

The main starting point of the study is based on the relationships between transformational - transactional leadership styles and four sub-dimensions of organizational change. The power of transactional leadership depends on the reinforcements of the subordinates in terms of rewards or resources. Levinson (1980) emphasizes that the transactional leaders are not always successful in motivating their followers, the followers may not feel well and their self-worth may be eroded with rewards of carrots for compliance or punishments due to non-compliance with the work accepted by the followers. This is important for school administrators, who play a key role in all stages of organizational change for educational organizations, in creating a positive school climate and maintaining a strong school culture and is thought to provide an overview of the leadership style of school administrators in order to successfully manage and maintain organizational change. On the other hand, besides its benefits, it can be unintended consequences of organizational change such as the echelons and polarization depending on the leaders that envision and manage the change, and perception of the followers that have to carry out and embrace the change (Boga & Ensari, 2009). At this point, it can be said that the transformational leadership is more effective on the school culture and all sub-dimensions of organizational change than the transactional leadership in the context of the results obtained in this research. Nevertheless, the fact that the relationship between transformational leadership style and school culture is higher than the transactional leadership style supports this. As Nadler and Tushman (1990), pointed out, one reason to the transformational leadership style predicting school culture more strongly than the transactional leadership style is that this might be due to the transformative leaders providing psychological and structural empowerment that revitalise the motivation, touch the enthusiasm and invigorate organizational commitment of the followers. The reality behind the success of organizational change depends on the leadership style put forward, an impact positive of this leadership style on followers, a comprehension of the ramifications of when and how interventions are planned, communicated, undertaken and, a strong school culture. It is thought the interaction between leadership style and school culture are both complex, sometimes elusive and incomprehensible and slippery concept in educational environments. Mortimore, (2001) stressed that we must intensify the complex interactions between school culture and schooling. In the literature, there is considerable evidence to suggest that the school administrators must understand, grasp and identify the school's existing culture before implementing stage of organizational change (Bulanch, 2001; Leithwood & Jantzi, 1990; Nomura, 1999). Many research (Angus, Prater, & Busch, 2009; Aslan, Özer, & Ağiroğlu, 2009; Demirtaş, 2010; Kalkan, et. al, 2020; and Saphier & King, 1985) are emphasized common purposes regarding a strong or weak aspect of school culture. Nevertheless, it must be taken into attention to anticipate that the school climate and teacher turnover give distinct nuances to the traits of the leadership from one school environment to another.

School culture as a mediator is stated to have positively correlation at a medium level with four sub-dimensions of organizational change. This means that school culture is a strong predictor to manage organizational change in educational institutions. It is highly expected that higher levels of school culture will increase the possibility of organizational change. Hallinger and Heck (1998) state that the school administrators' impact on learning is mediated through the school climate and school culture. Kalkan et. al. (2020) were found also strong and significant relationships between school culture, leadership styles and organizational image. This finding is important for this research supposing that organizational image is considered in the context of an interface reflecting the acceptance or support of the organizational change process.

In this study, school culture has a partial mediator role in the relationship between transformational leadership styles and DSOCH, PSOCH and ISOCH. On the other hand, school culture has a full mediator role only in the relationship between transformational leadership styles and ESOCH. Boga and Ensari (2009) predicted an interaction between organizational change and transformational leadership in the context of high changes. Boga and Ensari (2009) state also that the transformational leaders being architects of an organizational change will be more approving when they communicate, coordinate, and materialize the planned change persuading the followers' perspective about the unpredictability of change, institutionalizing long-term solutions, improving problem-solving skills in technology rich environments and sharing common goals and vision (Bass, 1985) during all stage of organizational change. In addition, school culture has a partial mediator role in the relationship between transactional leadership styles and all stages of organizational change. These results show us that school culture can play an important role in supporting all stages of organizational change, enhancing organizational effectiveness, facilitating change for school principals and reducing the possible resiliencies factors of teachers and other relevant school stakeholders to change. Investigating direct, indirect and total effects in the mediating role of both leadership styles can be important in explaining the role of leadership on organizational change. In this study, it can be concluded that direct and total effects between transformational leadership and all dimensions of organizational change have higher beta coefficient values than transactional leadership. It is concluded that direct and total effects are much stronger especially in the processes of determination, preparation and implementation of organizational change. As much, it has been observed that the transformational leadership style exhibited full mediation effect over the indirect effect of the school culture in the dimension of evaluating stage of organizational change. Although the direct and total effects of the transactional leadership behaviours are lower than the transformational leadership, it is also reached to conclude that the school culture has a partial mediating effect. The relative partial differentiation on the direct and total effects of these two leadership behaviours may be related to many internal and external reasons, such as leading with pressure or enthusiasm, giving a fillip intrinsic or external motivation, meeting expectations or providing gains individually. As a result, this study provides clues that both leadership styles exhibited by the principals in school environments have a positive effect on the followers. It is also possible to state the existence of a strong school culture here, and it can be said that it plays an important role in the effectiveness of organizational change. We not only argue that the greatest importance of transformational leadership behaviours exhibited by principals to have a positive school culture, but also emphasize to take into account transactional leadership behaviours is evident regarding organizational change based on school improvement. The models suggested in the study show that school culture might be effective in reducing negative behaviours of teachers regarding the organizational change. To prevent or reduce opposite opinions and negative indications of organizational change, strengthening teachers with the help of school culture is required.

It is recommended that the map of leadership, organizational change, and school culture level of the principals comparing with school types and regions can be revealed and may plan a training program in order to build organizational change management capacity.

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