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"The Effects of Distributive Leadership Style: Beyond Teachers' Job Satisfaction"

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Abstract

The purpose of the present study was to investigate the effect of Distributed Leadership on Job Satisfaction of teachers, and then determine the effects of DL and teachers' JS on the academic performance of high school students. This study was a descriptive-correlational work in terms of methodology and theoretical-applied work in terms of purpose. The statistical population of this study included two groups of stakeholders, namely teachers and 11th-grade students at high schools in Khuzestan province, Iran. Multi-stage cluster sampling used for sampling; accordingly, 52 out of 270 active schools in Khuzestan province selected as samples. On average, seven teachers from each school and all 11th-grade students from those schools who took the final exams participated in the study. The measurement tool for DL and JS was a Questionnaire with an alpha coefficient of 0.83, and 0.96. Final exam scores were also used to measure students' academic performance. Results showed that there was a significant relationship between all variables of DL and teachers' JS. Also, all variables of DL had a significant relationship with students' academic performance. The results of the regression analysis showed that JS and variables of DL are good predictors of students' academic performance. Finally, the results of this study showed that the outcomes of distributed leadership for schools are not limited to teachers' job satisfaction; but it affects directly and indirectly on one of the most important missions of the school - the improvement of student academic performance. This three-dimensional package is a necessity for 21st-century schools' effectiveness.

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Introduction

1.1 Problem statement

Distributive leadership requires a new look at inter-organizational relationships in which management of a group changes from individual management to collective and group management. Hence, in the knowledge society, a distributive form of leadership in schools offers a new approach to its followers in which shared decision-making is placed at the forefront for higher effectiveness and better results (Storey, 2004). Distributive leadership is a collective factor that coordinates the activities of many people at schools and guides teachers in the processes of educational change (Harris, 2004). Studies show that this form of school administration can lead to desirable outcomes for stakeholders in education systems. Among these desirable outcomes are improved job satisfaction for teachers and better academic performance for students. For example, studies have revealed a positive relationship between distributive leadership and organizational effectiveness of schools (Nasiri Valik Bani & Ghanbari, 2015; Zabardast et al., 2014), organizational citizenship behavior (Jafar et al., 2016), teachers' job satisfaction (Torres, 2018), students' academic achievement (Baiza, 2011), teachers' performance (Yasini et al., 2013), and students' improved learning outcomes (Hech & Hallinger, 2009). As noted above, distributive leadership has an impact on teachers' job satisfaction and students' academic performance.

Generally, job satisfaction refers to a person's feeling and attitude toward the job or profession he/she is pursuing. Other specific definitions are positive and negative emotions of people towards their job (Davis & Nestrom 1985, p. 109). The background of receiving desirable and undesirable rewards (Statt, 2004, 978). Emotional responses to a job (Naami & Shokrkon, 2004). Individuals' attitudes and inner feelings toward the job they are doing (Mullins, 2005). People's attitudes and feelings toward the job they are doing (Armstrong, 2006). Individuals' perceptions of success or failure in their careers (Kaliski,2007). One's attitudes and beliefs about what he/she is doing (Georg & Jones, 2008). The feeling that job can fulfill one's wishes (Jessen, 2015), and what people feel when answering, to what extent can a job respond to my needs, desires, hopes, and expectations?" (Skaalvik, & Skaalvik, 2017). One of the definitions favored by many researchers in the field of organizational behavior management is Locke's (1969). This definition can encompass all of the above definitions; according to him, job satisfaction is a pleasure that results from employees' evaluation of their job; when employees see their job as a factor in achieving goals or paving the way for a goal, job satisfaction is obtained (Sarai & Gudge, 2004). Studies show that this feeling is one of the key factors for success and increased productivity and efficiency of the employees and organizations. For example, the results of studies show that those with job satisfaction are more effective, remain in their careers for a longer time (Behjat et al., 2016), have high levels of job motivation, are more involved in their careers (Skaalvik & Skaalvik, 2017), and enjoy a desirable and satisfying sense of control (Jessen, 2015). Moreover, related to talents, job success, meeting rational needs, developing talents, career improvement, successful experiences, and organizational conditions (Maryart, 2008). Teachers' job satisfaction is an important source of personal satisfaction, is effective in maintaining and retaining teachers in their job, and promotes teachers' interest, dedication, and commitment to their responsibilities (Tasnim, 2006). Teachers' job satisfaction also has a direct and positive relationship with the productivity of school principals (Ansar Foumani, 2015), exerts a positive impact on students' quality of education (Haghighatian & Seifzadeh, 2016) autonomy, and self-control, and teachers' organizational

commitment (Masah et al., 1986). Accordingly, the job satisfaction of teachers positively and directly had a relation with distributive leadership and its variables and is one of the predictors of students' academic performance.

Academic performance refers to a range of skills, abilities, learning outcomes, and knowledge expected to obtain by students after participating in a course (York, Gibson & Rankin, 2015). Several studies have shown that teachers, students, and school administrators play a role in determining academic performance and that teachers' job satisfaction and students' academic performance are related. For example, the results of Truitt's (2002) study showed that in schools that have principals with well-developed leadership behaviors, students show better performance and steadily improve. The results of Ratliff's (2003) study showed that good teachers, student motivation, teacher-student interactions, and positive school conditions influence students' academic performance. Leithwood, Mascall, Straus, & Sacks (2008) conclude that leadership has a significant impact on student learning, which then extends to education and teachers' job satisfaction. In another study, Kembor (2008) concluded that distributive leadership had a positive impact on five organizational variables including organizational capacity, teachers' capacity, school culture, teachers' job satisfaction, and student learning outcomes. Another study shows that a distributive leadership model provides high potential for organizational transformation and development at schools (Leithwood & Wahlstorm, 2008). Studies also show that distributive leadership facilitates leadership and positive communication at schools and can act as a potential driver for positive changes in schools and their subsystems (Spillane, Healey, Parise, & Kenney, 2011). Job dissatisfaction can affect teachers' job burnout, school condition and students' academic performance (Farinde & Fitchett, 2016). Nasiri Valik Bani & Ghanbari (2015) stated that there was a positive and significant relationship between distributive leadership and the effectiveness of high schools in Hamadan. Behjat et al. (2016) found that distributive and democratic leadership styles could predict teachers' job satisfaction.

According to these findings, the main purpose of this study was to clarify whether the distributive model of leadership affects teachers' job satisfaction and whether teachers' job satisfaction and distributive leadership by school principals can be predictors of students' academic performance in our sample population.

1.2 Why this problem is important?

In recent years, studies on organizational behavior in a holistic construct called distributive leadership or collaborative leadership have received more attention (Denies et al., 2012; Wang et al., 2014; Dierksmeier, 2016). Distributed leadership was one of the most effective leadership ideas in 21st century (Bush, 2011) and refers to employees' participation in essential activities such as organizational change, organizational interactions, and defining employees' duties and expected performance (Jonsson, Unterrainer, Jeppesen, and Jain, 2016). Some scholars in the field of education, especially educational management, believe that distributive leadership can have a positive effect on the quality of teachers' work and improve students' performance. According to Lambay (2017), distributive leadership provides the necessary background for optimal use of formal power and the latent potential of all elements of the organization (including employees, funders, policymakers, and external stakeholders). Distributive leadership proposes transformation from person-based to team-based management and leadership at schools as a necessity because of the complexities of human issues and the environment in which they live. Also, emerging needs of educational organizations such

as clarity, accountability, community participation, equality, inclusiveness, rule of law, and central consensus (Ahmadi Rezaei, 2015) have led scholars to argue that one cannot successfully lead a school alone. Rather, principal and staff must manage schools in a team-based manner, through a shared decision-making system, and under a distributive leadership model (Grant, 2011).

1.3 Literature review

The emergence of distributive leadership was a paradigm shift in how leadership viewed. In other leadership models, such as servant leadership and ethical leadership, leadership generally defined as the process of influence. The leader introduced as a person who could influence others with his/her personality, charisma, or other abilities and who was able to optimize an organization's performance through personal influence. Distributive leadership is part of an overall movement away from heroic leadership, eliminating individual leadership and emphasizing collective leadership. This paradigm change concerned the nature of leadership in a knowledge-based economy (Alimo-Metcalfe, 2013). Thorpe, Gold, & Lawler (2011), claiming individual leadership is rooted in the Western individualistic culture, supported the idea of distributive leadership. They cited the views of Peter Singh (1990) and claimed that Singh criticizes individual heroic leadership for focusing on short-term events rather than emphasizing a systemic and collective learning perspective. Contractor, Noshir, DeChurch, Carter, & Keegan (2012) noted that recent leadership studies have shifted to an emerging model of leadership that is informal, dynamic, and collectivistic, rather than those models focusing on understanding the interactions and actions of leaders. Thorp et al. (2011) attribute the emergence of distributive leadership to a form of organization that is agile, flat, flexible, and matrix-based; they believe these features somehow reflect the limitations of the top-down and pyramid structures, in which the leader is considered a strong person at the highest levels of the organization. Spillane et al (2011) emphasized distributive leadership as a construct that shared between the leader, followers, and position. They believe that distributive leadership is understood through activities that shared between the leader, the subordinates, and the position. In this model of leadership, various groups participate in activities. Another theorist in this field is Fletcher (2004), who considered distributive leadership as a social process. He believes that leadership in the modern sense has three basic characteristics: 1) leadership as an action, 2) leadership as a social process, and 3) leadership as a learning process.

Generally, based on the views expressed in the field of distributive leadership, if we decide to have high-quality, high-performance schools, activities need to be done collectively. We must abandon the leader-as-a-hero model and adopt the distributive leadership theory. Spillane, Halverson, & Diamond (2001) argued that the behaviors, thoughts, and status associated with leadership must be analyzed in a unified framework to understand the new leadership style. Thus, they claimed that leadership should be distributed at schools, instead of all leadership tasks delegated to one person. This gives other members of a school a chance to participate in areas where they are competent, take part in decision making, and become part of the school leadership framework. According to Harris (2013), distributive leadership implies a kind of intrinsic dependence, not a leader's commitment to sharing responsibility with subordinates. School leadership is more than leadership in official positions. In distributive leadership, positions are distributed so that leadership is shared among large numbers of people in the organization. Harris argued that this theory of leadership could better be expressed as leadership that distributed among situational leaders and formal leaders. Leadership is a job for everyone

who interacts with schools' principals, teachers, staff, parents, community members, and students. Such an approach makes those involved responsible for students' academic performance and assigns leadership roles to people in areas where they are deserving and skilled. We can see summarized distributed leadership theory in the work of Gumus and colleagues (2016). They claimed that 1. Distributed leadership as a theory criticizes the hierarchical design of leadership 2. Organizational problem solving and effectively coordinate work has many ways but distributed leadership suggests personnel involvement in the decision-making mechanisms and collaboration among the entire organizational staff (Gumus, Bellibas, Esen, Gumus, 2016). There are several theories regarding the conceptualization of job satisfaction, which can be classified into content theories and process theories. The Motivator-Hygiene theory of Herzberg and Maslow's hierarchy of needs are examples of content theories. In this view, where the emphasis is on individuals, scholars try to identify the needs or values that can be used to keep people in their jobs. Process theories of job satisfaction emphasize the process of interacting with employee characteristics and attributes (Ward & Cowman, 2007). Among interactive theories that emphasize job characteristics, the Theory of Job Characteristics by Hackman and Aldham (1976) can be named. According to this theory, skills, task type, task importance, independence, and feedback are among the key characteristics related to job satisfaction. In other words, jobs that have such characteristics will be satisfying for individuals (Eyal & Roth, 2011). In general, from the perspective of need theory, if people get what they want, they will probably be more satisfied; when they fail to do so, the job will become more unpleasant. Expectancy theory suggests that the expectations of individuals influenced by job satisfaction, that job satisfaction is a unique concept, and its factors, extent and type must be examined separately for each individual. Reference group theory is similar to the need theory. This theory replaces the reference group's ideas and views with the needs of the individuals and states that it takes into account the views and opinions of the reference group. The Motivator-Hygiene theory, which has become more popular in recent years, links job performance and job satisfaction. Its basic argument is that a rich job will lead to satisfaction because it motivates the person to work well and to achieve satisfaction. On the other hand, a simple job can at best only lead to dissatisfaction, (Rocchi & Comire, 2016).

Academic performance includes a set of expected capabilities that a student obtains after participating in a course. This set includes A) Self-efficacy, feeling confident in one's ability to meet educational requirements and perform activities. B) Emotional effects, the individual's response to a set of emotions, such as anxiety, that may arouse the individual. C) Planning, the ability to organize executable classroom activities for each individual and the proper use of time for doing educational assignments. Planning is a systematic solution to get things done better and on time. D) Lack of outcome control: the belief that increasing one's activities does not produce the desired result, and E) Motivation: empowering behavior for further study and academic motivation to earn a high score, get the right job, or just study for its own sake, and to improve general knowledge and skills (Bigges, 1994 Quoted in Pourtahari). Learning outcomes can be studied from both quantitative and qualitative perspectives. The quantitative perspective in this study focused on teacher-centered education, knowledge transfer and evaluation through scores (Pourtaheri et al., 2014). Performance measured based on the results of one's activities. The performance of individuals in a given situation can be perceived as the result of the interrelationship

between effort, abilities, and perceptions of performance (Shayan, Knowledge & Body, 2017).

1.4 Objectives and research questions

The general objective of this study was to investigate the effect of distributive leadership and teachers' job satisfaction on high school students' academic performance. In addition to this general objective, the impact of distributive leadership on teachers' job satisfaction also examined. The general objective pursued through questions such as the following: What is the status of distributive leadership and its variables among high school principals in Khuzestan province, Iran? Is there a significant relationship between distributive leadership variables and job satisfaction of teachers? Is there a significant relationship between distributive leadership variables and students' academic performance? Are distributive leadership and teachers' job satisfaction good predictors of high school students' academic performance?

Methodology

2.1 Research method and design

The present study was a descriptive-correlational investigation in terms of methodology and a theoretical-applied investigation in terms of objective. The statistical population of this study consisted of three separate sections. The first section concerned the community of high school principals. The purpose of the study was to analyze the distribution of leadership in high schools. One way of checking school leadership was to ask principals to complete the distributive leadership questionnaires, and the second method was to ask teachers working in those schools the relevant questions. In this study, it was decided to use the second method. Since the distributive leadership analysis unit was a school, the current total score of distributive leadership in each school was calculated as the algebraic sum of seven teachers' responses. The second section was high school teachers, whose job satisfaction was the focus of the present study. Moreover, the third section was high school students, for whom academic performance evaluated.

2.2 Participants and sampling

Samples selected by multistage clustering; the whole province was divided into 5 geographical regions. Dezful and Masjed Soleiman were randomly selected from the north of the province, Azadegan plain and Shavur from the east, Ramhormoz and Behbahan from the west, Abadan and Mahshahr from the south, and districts 1 and 4 of Ahvaz from the center. The list of high schools in each of these cities were then obtained and sample high schools were randomly selected according to Table 1. School principals did not complete any questionnaires and an average of seven teachers completed the school principal leadership questionnaire to identify the status of distributive leadership. The academic performance of all students in the selected schools, who took the final exams of the 11th-grade was assessed.

Table (1) Statistical population and statistical samples

		East of province	West of province	Center of province	South of province	North of province	The whole province
schools	population	41	47	69	51	62	270
	sample	88	8	15	9	12	52
teachers	population	937	1045	2488	1661	1749	7880
	sample	59	64	88	74	81	364
11th-grade students	population	5665	6576	10280	6612	7560	36693
	sample	144	197	376	210	290	1217

2.3 Data collection instruments

Data collection instruments

The measurement tool used in this study consisted of two questionnaires, one for the status of distributive leadership by principals and the other for teachers' job satisfaction. The Delaware Development and Study Center Questionnaire with a Cronbach's alpha of 0.74 by Yassini, Abbassian, and Yassini (2013) was used to assess the status of leadership distribution. This tool has (been) re-validated and its reliability coefficient was estimated to be 0.833 in a pilot run. The results of the questionnaires (were) summarized in Table 2. The job satisfaction questionnaire of Smith, Kendall and Hollin, whose reliability coefficient confirmed by Cronbach's alpha coefficient, was also used to measure teachers' job satisfaction. The questionnaire consists of 70 questions and first compiled at Cornell University and had been used in various countries. The Persian translation of this questionnaire first prepared by Arshadi (2007) at Shahid Chamran University of Ahwaz and had (been) widely used in industrial and organizational studies. In a preliminary implementation to test internal consistency, the Cronbach's alpha for the questionnaire calculated to be 0.96. To measure the academic performance of 11th-grade students, the average final scores of each student was considered as an index of their academic performance.

Table (2) Reliability of study tools

The questions' criteria	Cronbach's alpha	Related questions
School culture	0.831	1-2-3
Participatory decision making	0.772	4-5-6
Professional development	0.783	7-8-9
Mission, vision, and goals	0.748	10-11-12
Trust	0.828	13-14-15
Full support	0.893	16-17-18
Leadership behaviors	0.863	19-20-21
The entire distributed leadership questionnaire	0.883	1-21
Job	0.849	1-22
Direct Responsible	0.887	23-36
Colleagues	0.761	37-47
Promotion	0.91	48-54
Salary and Benefits	0.889	55-63
Working Conditions in the Current Environment	0.798	64-70
The entire job satisfaction questionnaire	0.961	1-70

Results

Question One: According to the design of the study, the first question was about the existence and the distribution of distributive leadership scores and its variables in the high schools of Khuzestan province. Accordingly, the question raised as follows: **What is the status of distributive leadership variables among high school principals in Khuzestan province?** Teachers were asked to comment on the status of distributive leadership by their principals. Of the questionnaires given to teachers, 354 were returned and analyzed.

Descriptive statistics, chi-square, and Friedman tests used to analyze the results. The results are summarized in Table (3) and Table (4).

Table (3) Status of distributive leadership by high school principals

Variables	strongly disagree		disagree		relatively agree		agree		strongly agree	
	F	%	F	%	F	%	F	%	F	%
School culture	63	17.8	72	20.3	120	33.9	78	22	21	5.9
Participatory decision making	42	11.9	84	23.7	126	35.6	78	22	24	6.8
Professional development	42	11.9	114	32.2	111	31.4	72	20.3	15	4.2
Mission, vision, and goals	39	11	99	28	135	38.1	63	17.8	18	5.1
Trust	36	10.2	102	28.8	144	40.7	54	15.3	18	5.1
Full support	39	11	129	36.4	132	37.3	45	12.7	9	2.5
Leadership behaviors	51	14.4	99	28	135	38.1	45	12.7	24	6.8

As can be seen in Table (3), for the school culture variable, 18, 20, 34, 22 and 6% of the participants responded with strongly disagree, disagree, relatively agree, agree, and strongly agree respectively when asked whether their school culture has adopted distributive leadership. Similarly, the values for all seven variables of distributive leadership are shown in the table above. The chi-square test was used to determine which variables of distributive leadership have better conditions in schools. According to the data in Table 4, the test calculated statistically significant results for all variables at the 0.05 level; in other words, high school teachers believe that all variables of distributive leadership exist in schools.

Table (4) Chi-square and Friedman tests for variables of distributive leadership at high schools

Statics \ Variables	School culture	Professional development	Professional development	Mission, vision, and goals	Trust	Full support	Leadership behaviors
Chi-square	23.610	29/627	34.966	41.322	49.966	59.458	38.441
Degrees of freedom	4	4	4	4	4	4	4
p-value	/000	/000	/000	/000	/000	/000	/000
Friedman test (average rating)	4.07	4.35	3.95	4.08	4.07	3.59	3.88
Rating	3	1	4	2	3	6	5

The Friedman test was used to rank the variables. The results showed that from the viewpoint of the teachers participating in this study, all variables were observed in the schools and principals. Table 4 shows how teachers prioritized these variables.

Question 2: Is there a significant relationship between the variables of distributive leadership by principals and the academic performance of 11th-grade students?

Table (5) Correlation test for variables of distributive leadership by principals and academic performance

Variables	Academic performance	
	Correlation coefficient	p-value
School culture	0.498	0.00121
Participatory decision making	0.324	0.00131
Professional development	0.203	0.00167
Mission, vision, and goals	0.06	0.25001
Trust	0.450	0.00136
Full support	0.545	0.00107
Leadership behaviors	0.069	0.19241

Analysis of correlation coefficients was used to answer this question. For this purpose, the academic performance of high school students was calculated as the average score of their final exams. The academic performance score for each of the 52 schools, which was the mean of the final exam scores of all students at the school were obtained. Distributive leadership scores for all 52 schools were also calculated based on questionnaires completed by teachers in the same schools. Pearson's correlation coefficient calculated between each variable of distributive leadership and students' academic performance. Pearson's correlation coefficient showed that there was a significant relationship between all variables of distributive leadership and students' academic performance except professional development and full support.

Question 3: Is there a significant relationship between variables of distributive leadership by principals and teachers' job satisfaction?

Table (6) Correlation test for the relationship between variables of distributive leadership by principals and job satisfaction of teachers

Distributive Leadership Components	Correlation coefficient	p-value
School culture with job satisfaction	0.258	0.001
Participatory decision making with job satisfaction	0.180	0.001
Professional development with job satisfaction	0.141	0.007
Mission, vision, and goals with job satisfaction	0.348	0.001
Trust with job satisfaction	0.233	0.001
Full support with job satisfaction	0.354	0.001
Leadership behaviors with job satisfaction	0.353	0.001
Total Distributed leadership score with job satisfaction	0.331	0.001

To answer this question, job satisfaction was calculated based on Smith, Kendall and Hollin's 70-item job satisfaction questionnaire. Pearson's correlation coefficient showed that there was a positive and significant relationship between the total score of distributive leadership and total score of teachers' job satisfaction. It was also observed that although all variables of distributive leadership positively and significantly correlated with high school teachers' total job satisfaction scores, the value of the correlation coefficient was very small in some cases. For example, the coefficient for the correlation between professional development and job satisfaction is only 0.141.

Question 4: Are distributive leadership by principals and teachers' job satisfaction good predictors of high school students' academic performance?

Multiple regression analyses was used to examine the fourth question. This type of regression analysis indicates whether independent variables are good predictors for the dependent variable and how much of the variance of dependent variables can be explained by the independent variables? The simultaneous method was used to perform multiple regression analysis; therefore, all variables of distributive leadership were entered into the regression equation simultaneously.

Table (7) Regression analysis statistics of the effect of distributive leadership and job satisfaction on academic performance

p-value	F statics	Adjusted Coefficient of Determination	Coefficient of Determination (R^2)	Correlation Coefficient (r)
0.001	62.39	0.253	0.257	0.507

According to the statistics in Table 7, the multiple correlation coefficient is 0.507 and the coefficient of determination is 0.225. Therefore, the distributive leadership of schools and teachers' job satisfaction accounts for approximately 0.257 of the variance in students' academic performance, and the rest of the variance can be explained by external and unknown factors that were not included in this study.

Table (8) Statistics for the effect of variables of distributive leadership by principals and teachers' job satisfaction on academic performance

Indices / Variables	Non-standard coefficients		Standard coefficients	t statics	p-value
	B	Standard error	Beta		
y-intercept	-37.93	8.48		-4.47	0.001
Distributive leadership	16.73	1.82	0.456	9.19	0.001
Job satisfaction	4.58	2.17	0.104	2.11	0.036
a: The dependent variable was students' academic performance					

Table 8 shows that both the effect of distributive leadership and teachers' job satisfaction on students' academic performance was significant at the 0.05 level. This means that variables of distributive leadership and teachers' job satisfaction predict 25% of the variance in students' academic performance. The next index is the β for each variable. As can be seen from the p-values, both the variables of distributive leadership and job satisfaction significantly predict students' academic performance. These findings suggest that the academic performance score will increase by 0.45 standard deviation with an increase of one standard deviation in the distributive leadership score. By increasing the job satisfaction score by one standard deviation, the academic performance score will increase by 0.104 standard deviations. According to Table 8, the beta coefficient for the variables of distributive leadership is 0.456, which is larger than the beta for job satisfaction; therefore, distributive leadership had a greater role in predicting students' academic performance than teachers' job satisfaction. In the following, we examine how the variables of distributive leadership affect students' academic performance.

Table (9) Multiple regression analysis of the effect of principals' distributive leadership on students' academic performance

p-value	F statics	Adjusted Coefficient of Determination	Coefficient of Determination (R^2)	Correlation Coefficient (r)
0.001	32.73	0.380	0.392	0.626

Table 9 shows the coefficients of correlation and determination, F statistic and significance level of the model. According to the table, the correlation coefficient is 0.626 and the coefficient of determination 0.392; thus, the variables of distributive leadership account for 0.392 of the variance in students' academic performance. The obtained value of F statistic (32.73) and p-value (0.001) showed that explanatory variables could significantly predict changes in the dependent variable, i.e. academic performance.

Table (10) Statistics for the effect of variables of distributive leadership on students' academic performance

Indices / Variables	Non-standard coefficients		Standard coefficients	t statics	p-value
	B	Standard error	Beta		
y-intercept	-15.4	7.14		-2.15	0.032
School culture	-0.06	1.71	-0.002	-3.038	0.001
Participatory decision making	4.092	1.82	0.120	2.24	0.026
Professional development	4.15	1.36	0.140	2.85	0.039
Mission, vision, and goals	9.25	1.62	0.34	5.69	0.001
Trust	13.66	1.56	0.45	8.76	0.001
Full support	-8.12	1.56	-0.285	-5.20	0.001
Leadership behaviors	5.04	1.62	0.37	3.64	0.021
a: The dependent variable was students' academic performance					

As seen in table 10 and the p-values for each variable, 6 variables of distributive leadership, namely school culture, participatory decision-making, professional development, mission, vision and goals, trust, full support and leadership behaviors significantly predict academic performance. These findings suggest that academic performance scores increase by 0.37 standard deviation if leadership behavior score increases by one standard deviation.

Table (11) Multiple regression analysis for the effect of variables of distributive leadership by principals on teachers' job satisfaction

p-value	F statics	Adjusted Coefficient of Determination	Coefficient of Determination (R2)	Correlation Coefficient (r)
0.001	11.27	0.165	0.181	0.426

Table 11 shows the coefficients of correlation and determination for the effect of variables of distributive leadership by principals on teachers' job satisfaction. According to the table, the correlation coefficient is 0.426 and the coefficient of determination is 0.181. Thus, it can be claimed that variables of distributive leadership by principals explain 0.181 of the variance of job satisfaction among teachers. The obtained value for F (27.11) and the p-value (0.001) showed that explanatory variables were significantly able to predict changes in the dependent variable, i.e. teachers' job satisfaction.

Table (12) Effect of variables of distributive leadership by principals' on teachers' job satisfaction

Indices / Variables	Non-standard coefficients		Standard coefficients	t statics	p-value
	B	Standard error	Beta		
y-intercept	2.548	0.18		14.14	0.001
School culture	0.112	0.043	0.117	2.27	0.007
Participatory decision making	0.152	0.046	0.17	1.13	0.025
Professional development	0.115	0.034	0.223	2.42	0.006
Mission, vision, and goals	0.086	0.041	0.146	2.11	0.036
Trust	1.012	0.039	0.119	2.314	0.004
Full support	0.133	0.039	0.215	3.394	0.001
Leadership behaviors	0.096	0.041	0.615	2.355	0.0019
a: The dependent variable was teachers' job satisfaction					

As can be seen from the y-intercepts, the values of the t-statistic and p-values, all variables of distributive leadership had a significant effect on the job satisfaction of teachers. Given the beta coefficients, all variables of distributive leadership explained a large share of variance in job satisfaction among teachers.

Discussion

The results showed that the variables of distributive leadership in high schools in Khuzestan province were in good condition (Table 3). Among the variables of distributive leadership, participatory decision-making was in better condition. The clear message of this section of our study is that distributive leadership applied at a satisfactory level in high schools in Khuzestan province. The question that can be asked here is "what factors can influence the development of a distributive leadership style in schools?" This may be related to the increasing tendency of school principals to study at universities; the sample survey showed that 148 participants had a master's degree or higher. Experience can also be one of the factors influencing the use of a distributive leadership model. More than a quarter of the participants had more than 20 years of experience. Also, a person's maturity can influence their decision making. The average age of principals in our study (41 to 50 years) is suitable for high school management. Almost half of the study participants were in this age range. The results of calculating Pearson's correlation coefficient showed that among the seven variables of distributive leadership, five (school culture, participatory decision making, mission, vision and goals, trust, leadership behaviors) had a significant direct relationship with teachers' job satisfaction. The results of this section confirm the findings of previous research such as Harris (2004), Torres (2018), Baiza (2011), Yassini et al. (2013). Why and how does distributive leadership affect teachers' job satisfaction? It may be argued that the main essence of distributive leadership is to shift from a person-centered to a team-centered view and to distribute power among the entire staff of an organization. In such circumstances, participatory and collective decision-making takes the place of individual decision-making so that the opinions and ideas of everyone in the organization can be used. Therefore, it can be expected that those involved in decision-making will be more willing to act on the decisions that they have made. The idea of good governance in this area may be more straightforward; according to this perspective, having vision, transparency, collective participation, and accountability are key variables of the good governance model in the education system, which guarantees the effectiveness of the institution. It is in such an environment that all colleagues can see the effects and consequences of their activities; thus, they will act more enthusiastically and will have a positive impact on the organization. (Ahmadi Rezai & Sadat Maleki, 2015). Job satisfaction as a consequence of distributive leadership, therefore, seems likely .

The two independent variables (distributive leadership and teachers' job satisfaction) entered into the regression equation using the simultaneous method. These variables can significantly predict the dependent variable (students' academic performance). The results of multiple regression analysis showed that distributive leadership and its variables had a significant effect on the job satisfaction of teachers. These results were consistent with studies such as Troit (2002), Rutleff (2003), Litwood, Marcel, Strauss & Sachs (2008), Cumber (2008) Litwood, and Waltham (2008), Spielan, Haley, Pariz & Kenny (2011), Ferdinand Fitchett (2016), Nasiri Valik Bani, & Ghanbari, 2015). Students' academic performance is usually calculated by their success in the main final examinations. Although, this view is strongly opposed and academic performance is diminished by the success of students in the final exams, there are many challenges. It can nevertheless be an index of how well an education system works. Ignoring this, the question arises as to why

distributive leadership and job satisfaction can be predictors of students' academic performance. To explain this observation, it can be said that when teachers feel good, lively, and motivated about their work and eagerly pursue educational activities, it is likely that this excitement will spread to the students as well, and teachers will pursue their career more seriously. Therefore, one of the inevitable consequences of teachers 'job satisfaction will be the improvement of students' academic performance.

To explain why distributive leadership has an impact on job satisfaction, it can be said that if one looks at job satisfaction from the perspective of needs, distributive leadership can meet some of the teachers' needs through teaching and school attendance. For example, the need for power is one of the basic needs of every person who can be met in the context of distributive leadership. Every teacher in a school can exert his/her personal power and influence current school processes by participating and commenting on school plans and programs. Furthermore, from the perspective of job characteristics, it is possible to enrich and expand a teaching job using distributive leadership. By participating in current school issues, teachers gain a good understanding of current school issues and even the outside environment, strengthen their human relationships, and gain confidence; the likely consequence of such pleasurable events will be teachers' job satisfaction.

Conclusion

In general, based on the results of the present study and previous studies, it can be said that both the distributive leadership style and teachers' job satisfaction have a direct impact on students' academic performance. The leader at a school should consider how to improve teachers' performance to increase the quality of teaching and the academic performance of students. To this end, the concept of distributive leadership provides a valuable resource. Under this style of leadership, teachers have more opportunities to participate in their professional activities. If school principals lead through interaction with the teaching staff, they can create a positive outlook for teachers, which will help with achieving schools' goals. Adopting this leadership style will also lead to a positive view of school activities; as a result, teachers will feel positive about their ability and will be able to transfer that positive energy to students. Since teachers are involved in achieving the main goals of schools, they are very responsive to the activities of the school. Moreover, this leadership approach creates high expectations for schools to achieve their goals. The results of this study indicated that educational leaders can have a positive impact on teachers' effectiveness and their job satisfaction and consequently the students' academic performance through a distributive leadership approach.

Ethical considerations

During the implementation of this research and the preparation of the article, all national laws and principles of professional ethics related to the subject of research, including the rights of statistical community, organizations and institutions, as well as authors and writers have been observed. Adherence to the principles of research ethics in the present study was observed and consent forms were consciously completed by all statistical community.

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Conflict of interest

According to the authors of the present article, there was no conflict of interest.

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