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**TRANSFORMATIONAL LEADERSHIP AND ORGANIZATIONAL
INNOVATION: THE MEDIATING EFFECT OF POSITIVE
PSYCHOLOGICAL CAPITAL**

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Abstract

The aim of the research is to find out whether there is a relationship between the transformational leadership style behaviors perceived by white-collar employees currently working in Turkish Standards Institution (TSI) and organizational innovation of the firm. Furthermore, in the study, we examined whether the positive psychological capital of employees has a mediating effect on this relationship. 1200 white-collar employees working in TSI have constituted the sample of the research, 325 of them have been reached via the survey. The surveys consist of samples aimed at obtaining demographic information of the participants and measuring their transformational leadership perceptions, organizational innovation, and positive psychological capital. 296 feedbacks were received related to surveys and 278 of them were approved to be sufficient to be used within the scope of the survey study. SPSS 22.0 statistical software package has been used in order to analyze the data of the study. First, frequency analyses were applied in the scope of the demographic characteristics of participants, and then the exploratory factor analysis, reliability analysis, and the correlation analysis were applied within the scope of the answers to the scales used, and finally, the hypothesis tests were applied. The result of the study showed the relationship between the transformational leadership and the organizational innovation. And also, the research has revealed that the positive psychological capital has a mediating role in the relationship between the transformational leadership style and the organizational innovation.

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Keywords: Transformational leadership, positive psychological capital, organizational innovation, turkish standards institution.



1. Introduction

Leadership requires bringing people together without using force and convincing them to work for a common purpose. In the literature, transformational leadership is proposed for this task. Transformational leaders have a realistic strategic vision which is attractive for the future. Transformational leaders create this vision by the stories, symbols and other arguments of their followers. Thus, they motivate their followers in line with the strategic objectives of the organization. Transformational leaders influence their followers through their charisma, motivate, intellectually encourage, and always pay individual attention to each individual and organizational goals.

“Positive psychological capital is a positive situation associated with the hope, self-efficacy, psychological resilience and optimism characteristics of the employees. These positive emotions are based on a strong theory that has a positive effect on measurable, situational, developmental, and behavior and performance of employees. Already the expectations of the leaders from the employees, the positive increase in performance (Sehitoglu et al., 2017).”

The main purpose of the study is to examine the relationship between the transformational leadership and the organizational innovation that managers have in order to catch the transformation, and to examine whether the positive psychological capital has a mediating role on this relationship if it exists. The importance and the expected contribution of the study are to explain the relationship between transformational leadership and organizational innovation, and to provide a new perspective to the managers and employees in the business, and to contribute to the previous scientific studies about these variables in a constructive way. In addition to all of these, regarding the institutions such as TSI that needs a high level of the qualified workforce, and where the data is collected, another purpose of the study is to explain the clues of transformation, a key concept for the institutions that want to compete with similar institutions in international level. In this context, examining whether positive psychological capital has a mediating role in the relationship between transformational leadership style and organizational innovation will be one of these clues.

2. Literature Review and Theoretical Framework

2.1. Transformational Leadership

Transformational leaders are leaders who can change and transform by positively changing their needs, beliefs and followers' value judgments (Koçel, 2005). Transformational leadership behaviors consist of four dimensions based on idealized effect (charisma), inspirational motivation, intellectual encouragement and individualized attention (Bass & Avolio, 1995). Ideal Effect (Charisma): Represents the concepts of value, belief and mission in terms of the charismatic behavior of the transformational leaders (Kaygın & Güllüce, 2012). Inspiration Motivation: Transformational leaders motivate them to achieve a high level of performance and to follow the organization's mission and objectives through the use of these features (Omar, 2013, p. 348). Intellectual Encouragement: Transformational leaders mobilize their followers to encourage about the situations within the organization, enabling them to find innovative and creative solutions to the challenges the organization is trying to solve (Kreitner & Angelo, 2009). Individualized Attention: Transformational leaders develop the skills of analyzing of followers through by individualized attention. This dimension encourages the contributions of those who follow the processes of

organizational change and transformation and the proper use of their desires, needs, values and capabilities in favor of their organizations. Therefore, in this way, transformational leaders know how to motivate each followers individually (Gül & Şahin, 2011).

2.2. Positive Psychological Capital

Luthans, Youseff, and Avolio have described positive psychological capital as a positive psychological condition associated with features such as self-confidence in order to successfully complete challenging tasks and as the struggle for struggle to be successful in combating the challenges now and in the future. (Luthans, Youseff, & Avolio, 2007). In this respect, positive psychological capital is a promising factor for organizations to eliminate the problems that may arise. The source of positive psychological capital relies on research, is based on generally accepted methods of measurement and is always open to development based on the situation (Luthans, 2002). Sub-dimensions of the positive psychological capital are hope, self-efficacy, optimism, and the psychological resilience. Hope is defined as the positive thoughts of individuals to reach their goals (Snyder et al., 1991). Self-efficacy: It is defined as the beliefs of individuals in their ability to use their motivations, cognitive resources and action plans in order to reach a pre-determined goal in which they are aware and know (Luthans, Youssef, & Avolio, 2007). Psychological Resilience: It is defined as to categorize the cases by having positive adaptation in risky and highly problematic cases (Masten & Redd, 2002). Optimism: It is defined as the positive evaluation of the situations of encountering internal, permanent and widespread events while associating external, temporary and situational events with the causes of negative events (Seligman, 2011).

2.3. Organizational Innovation

The concept of innovation is a very broad concept. To this end, the researchers have carried out some research studies to distinguish innovation, innovation adaptation, and innovativeness (Van de Ven & Rogers, 1988). Although these concepts have similar characteristics among themselves, this research has a qualification for the organizational adoption of organizational innovations. The adoption of innovations in the organization involves the emergence, development or implementation of the new ideas or behaviors. An innovation, a new product or service, a new process technology, a new management system, or a new plan or program specific to its members may be in line with it (Damanpour, 1991). Therefore, the innovation is defined as the adoption of a machine, system, process that is produced or purchased within the organization (Daft, 1982; Damanpour & Evan, 1984; Zaltman, Duncan, & Holbek, 1973). This definition extends to all departments of organizations and all processes of these departments.

The adoption of innovation by the organization is generally aimed at contributing to the organization's performance or effectiveness. Innovation is a tool to change the organization in the final analysis whether it is adapting to a change that takes place inside or outside the organization. Hence, the organizations are constantly adopting innovations as they change even during the most stable periods (Hage, 1999). Therefore, when multiple things are taken into consideration from individual innovations, the definition of organizational innovation in terms of its meaning lies more accurately in the minds (Damanpour, 1991).

Some studies on the relationship between the leadership and positive psychological capital were found in the literature review made within the scope of this study. However, in the national literature, there are not enough studies on the relationship between the positive psychological capital and the transformational leadership. In foreign literature, however, in the research made by Zhu & Wang (2011) on Chinese entrepreneurs, titled "The Strategic Role of Transformational Leadership and Information Share in the Relationship Between Entrepreneurs' Psychological Capital and Employees Innovative Behavior", The transformational leadership behaviors of entrepreneurs positively affect their positive psychological capital. Innovative behavior of entrepreneurs also positively affects their transformational leadership style. (Zhu & Wang, 2011). In another study made by McMurray et al. (2010), titled "Leadership, Organizational Climate, Positive Psychological Capital, Organizational Commitment and Prosperity in Non-Profit Organizations", the researchers examined the relationship between these concepts. According to the results, there is a positive relationship between the managers' transformational and transactional leadership style and the positive psychological capital, organizational commitment, and prosperity of the employees. (McMurray et al., 2010). The conclusion of the study of Gooty et al., (2009), titled "Transformational Leadership, Positive Psychological Capital and Performance", reveals that the transformational leadership perception of the employees is related to their positive psychological capital and performance outputs (Gooty et al., 2009). Within the framework of these results;

H1: Transformational Leadership has an effect on the Positive Psychological Capital.

There is not enough study on the relationship between positive psychological capital and innovation variables in the literature. The study carried out by Ziyae et al., (2015) and titled "The Effect of Psychological Capital on Innovation in Information Technology" on the information technology sector, reveals that the psychological capital has effects on the innovation. In a study on innovation teams, Sartori et al. (2013) found a positive relationship between the open and closed innovation and the psychological capital and the effect of human capital. The research by Wu & You (2011) titled "Cross-level Analysis of Staff Psychological Capital, Organizational Innovation Climate, and Technological Innovation Performance", concludes that the positive psychological capital of employees has a positive effect on the innovation performance and the organizational innovation. Being inspired from these studies;

H2: Positive psychological capital has an effect on the organizational innovation.

In management literature, it is seen that the leadership behaviors induce innovation in many research studies when the relationship between the leadership and the innovation variables are examined (Amabile, et al., 1996; Mumford & Gustafson, 1988; Mumford, Scott, Gaddis, & Strange, 2002). In addition to these studies, the studies of Chen et al., (2016) on Transformational Leadership, Social Capital, and Organizational Innovation, it has been concluded that the transformational leadership and the organizational innovation have a mediating role on the transformation capital leadership and the organizational innovation of the social capital. In another study, Schuckert et al., (2018) found that the leadership of an authentic leadership and the transformation had an effect on the innovation. Moving from these results;

H3: Transformational leadership has an effect on the organizational innovation.

In the management literature, there has been no study investigating the role of the transformational leadership in the mediating effect of the positive psychological capital and the organizational innovation. However, in the light of the current literature, it is suggested that the positive psychological capital has a mediating role in the relationship between the transformational leadership and the organizational innovation. Moving from this point;

H4: Positive psychological capital has a mediating role in the relationship between transformational leadership and the organizational innovation.

3. Research Method

3.1. Sample and Data Collection

Placing standards in terms of production in Turkey, meticulously monitoring the set standards, it is regarded as Turkish Standards deemed appropriate standard, done that they inform the public of accepted standards, promoting implementation of the general meaning of these standards are the basic task of the Turkish Standards Institute. At the same time, it is the other duties of the Turkish Standards Institute to examine important works in other countries and to cooperate strategically with the institutions of these countries. In this respect, it was found appropriate to examine the variables of leadership, organizational innovation and positive psychological capital in this institution.

The survey prepared in the scope of the study has been given to 325 of white-collar employees in TSI and 296 feedbacks were returned. 278 surveys were determined to contribute to the research. The scale of which has not formed under the conditions of Turkey and the different features of the theory of what could be so helpful in understanding the conditions in Turkey is very important to understand (Özen, 2002). The scales used in this study were created by non-Turkish researchers. Therefore, the assumptions of the research are that the scales used conform to the Turkish culture and the participants correctly understand the questions in the questionnaire and sincerely answer the questions. The constraints of the research include that the research was made only for employees of TSI in Gebze Campus and the headquarters of the organization, and the time constraint of the employees consisting the main mass due to their workload.

3.2. Analyses

“The transformational leadership scale used in the research is the MLQ-5 x Short Rater scale which is used very frequently in research and developed by Bass and Avolio (1995). This scale was translated into Turkish by Karip (1998). Karip (1998, p. 9) in his research changed a few words to prevent misinterpretation of some questions on the scale.

As described in the previous sections, the Positive Psychological Capital has been studied under four dimensions: 'Hope', 'Self-efficacy', 'Optimism' and 'Psychological Resilience'. Positive Psychological Capital scale was developed by Luthans et al., (2007). The Turkish version which was prepared by Çetin

& Basım (2012) and Erkuş, & Afacan-Fındıklı (2013, p.309-310) was used. Minor modifications were made in the questions of the survey to avoid semantic shifts (Sehitoglu et al., 2017).”

Organizational innovation was measured with a six-item scale originally developed by Miller & Friesen (1982), later modified by Hoffman & Hegarty (1993). The scale was translated into Turkish in this research. At first, the original scale was translated into Turkish by three management academician and then the translated version was translated into English from Turkish again. There was no difference between the original and the translated version of the scale in English.

According to the demographic data collected from the participants of the research, there were 202 male and 76 female participants. In addition, the ages of the participants were between 22 and 58. In terms of their experience level, there were 88 participants with 6-10 years of work experience (31.7%), and 68 participants (24.5%) with the experience ranging between 0-5 years. Next, 52 participants (24.5%) had the work experience between 16-20 years. 38 participants (13.7%) had the work experience between 11-15 years, and finally, there were 32 participants (11.5%) with the work experience of 21 years or longer.

4. Findings

4.1 Factor Analysis

Exploratory factor analysis was carried out using Varimax Rotation and Basic Components Analysis to determine whether the scale items used in the study would be separated into the theoretically predicted factor components.

Kaiser-Meyer-Olkin (KMO) Test for Sampling Adequacy and Bartlett's Tests for sphericity have been carried out to test the eligibility of the dataset for the factor analysis. At end of the analyses, KMO values have been determined to be 0.926 for transformational leadership scale, 0.810 for organizational innovation scale, and 0.824 and 0.50 for the positive psychological capital scale. The tail probability of Bartlett's test was observed in 0.001 significance level for all of the scales. In addition, to measure the eligibility of each variable for the factor analysis, the value in anti-image correlation matrix diagonal was checked and it was observed that the values in the diagonal are greater than 0.50 for all variables. Therefore, it has been determined that the factor analysis is appropriate for the datasets (Field, 2009).

The factor analysis results which were obtained as factor loads to be minimum 0.50 (Hair et al., 2010), are given in the table below. As theoretically predicted, each of the transformational leadership, organizational innovation, and the positive psychological capital scales has been perceived in four sub-dimensions. The components of the total variance explained are 76.4% for transformational leadership scale, 83.6% for organizational innovation, and 66.4% for the positive psychological capital

Table 01. Transformational Leadership Scale Exploratory Factor Analysis

Factors	Factor Units	Factor Loads			
		Charisma	Motivation	Intellectual Encouragement	Individual Attention
Charisma	Charisma1	.732			
	Charisma2	.848			
	Charisma3	.722			
	Charisma4	.607			
	Charisma5	.761			
	Charisma6	.747			
Motivation	Motivation2		.670		
	Motivation3		.717		
	Motivation4		.819		
	Motivation5		.613		
Intellectual Encouragement	Encouragement1			.747	
	Encouragement2			.703	
	Encouragement3			.692	
	Encouragement4			.726	
	Encouragement5			.674	
Individual Attention	Attention1				.670
	Attention2				.787
	Attention3				.766
	Attention4				.735
Described Variance		58.587	4.425	8.203	4.987
Total Described Variance		76.402			

Notes: (I) the Varimax Rotation Basic Components analysis (ii) KMO = 0.926, Bartlett test; $p < 0.001$

Table 02. Positive Psychological Capital Scale Exploratory Factor Analysis

Factors	Factor Units	Factor Loads			
		Optimism	Self-Efficacy	Psychological Resilience	Hope
Optimism	Optimism4	.766			
	Optimism5	.801			
	Optimism6	.786			
Self-Efficacy	Self-Efficacy1		.683		
	Self-Efficacy 2		.896		
	Self-Efficacy3		.823		
	Self-Efficacy4		.535		
Psychological Resilience	Resilience1			.670	
	Resilience2			.618	
	Resilience3			.749	
	Resilience4			.782	
	Resilience6			.782	
Hope	Hope1				.704
	Hope2				.564
	Hope3				.863
	hope4				.663
Variance Explained		6.77	13.35	35.94	10.34
Total Variance Explained		66.4			

Notes: (I) the Varimax Rotation Principal Components Analysis (ii) KMO = 0.824, Bartlett Test; $p < 0.001$

4.2 Reliability Analysis

Cronbach Alpha Coefficient was used to test the reliability of the scales and scale dimensions used in the study. According to the results of these tests Charisma (0.919), Motivation (0.913), Intellectual Incentive (0.900), Individualized Interest (0.902), Optimism (0.707), Self-Efficacy (0.834), Psychological Endurance (0.783), Hope (0.745) and Organizational Innovation (0.891), so the reliability values of the variables are over 0.70. (Field,2 009).

Table 03. Reliability Analysis

Factors	Item Quantity	Cronbach's Alpha
Charisma	6	0.919
Motivation	4	0.913
Intellectual Encouragement	5	0.900
Individual Attention	4	0.902
Optimism	3	0.707
Self-Efficacy	4	0.834
Psy. Resilience	5	0.783
Hope	4	0.745
Organizational Innovation	6	0.891

4.3 Correlation Analysis

The correlation analysis was applied to examine the relationships between the research variables with each other. Pearson correlation coefficients belonging to the corresponding variable are given in the following table.

Table 04. Correlation Analysis

Correlations											
	Charisma	Motivation	Intellectual Encouragement	Individual Attention	Optimism	Self-Efficacy	Psy. Resilience	Hope	Positive Psy.l Capital	Transformational Leadership	Org. Innovation
Charisma	1										
Motivation	,729**	1									
Intellectual Encouragement	,679**	,760**	1								
Individual Attention	,650**	,713**	,748**	1							
Optimism	,175**	,182**	,188**	,160**	1						
Self-Efficacy	,312**	,283**	,266**	,228**	,049	1					
Psy. Resilience	,232**	,303**	,228**	,270**	,062	,636**	1				
Hope	,326**	,401**	,294**	,366**	,140*	,408**	,533**	1			
Positive Psy. Capital	,375**	,418**	,352**	,366**	,518**	,736**	,785**	,719**	1		
Transformational Leadership	,876**	,917**	,818**	,886**	,193**	,305**	,303**	,410**	,433**	1	
Organizational Innovation	,120*	,171**	,129*	,238**	,135*	,147*	,192**	,251**	,261**	,200**	1

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).

4.4. Hypothesis Test

SPSS 22.0 software package was used to test the research hypotheses. At this stage, it was first examined whether the variable of transformational leadership, the independent variable of the research, directly influenced the positive psychological capital, which is the mediating variable. According to the result of this analysis, the transformational leadership has a direct positive effect on the positive psychological capital ($\beta = 0.433$, $p < 0.001$). Therefore, H1, the first hypothesis of the study, was confirmed.

Then the researcher looked at whether positive psychological capital had an effect on the organizational performance, which was the dependent variable of the research. According to the results, positive psychological capital has a direct positive effect on organizational innovation ($\beta = 0.261$, $p < 0.001$). According to this result, H2, the second hypothesis, was confirmed. Then, the transformational leadership, the independent variable of the research, and its effect on the dependent variable, which was the organizational innovation, was tested. The results showed that transformational leadership has a positive direct effect on the organizational innovation ($\beta = 0.200$, $p < 0.001$). Therefore, the third hypothesis of the research, H3, was confirmed. According to Baron and Kenny (1986), three regression relationships need to be established to consider the variable's mediating role. The first step of the inter-variable relationship was provided by the three regression models above. In the second step, the effect of the independent variable on the dependent variable needs to either increase or decrease (Baron & Kenny, 1986), while the mediator variable and the moderator variable both need to have an influence on the dependent variable in the regression. According to the regression analysis, in which the organizational innovation was the dependent variable and transformational leadership was the independent variable, the effect on the organizational innovation, was abolished ($p > 0.05$) and the effect of the variable positive psychological capital on the organizational innovation continues. Therefore, the effect of positive psychological capital is mentioned. In other words, positive psychological capital has a mediating role on the transformational leadership and the organizational innovation relation. Therefore, H4 was confirmed.

Table 05. Regression Analysis

Hypotheses	Independent Variables	Dependent Variables	Std. B	t	p
H1	<i>Transformational Leadership</i>	<i>Positive Psychological Capital</i>	0,43***	7,976	,000
			<i>R2=0,18 F=463,614 p<0,001</i>		
H2	<i>Positive Psychological Capital</i>	<i>Organizational Innovation</i>	0,26***	4,487	,000
			<i>R2=0,065 F=20,131 p<0,001</i>		
H3	<i>Transformational Leadership</i>	<i>Organizational Innovation</i>	0,20***	3,387	,001
			<i>R2=0,036 F=11,473 p<0,001</i>		
H4	<i>Positive Psychological Capital</i>	<i>Organizational Innovation</i>	0,21***	3,337	,001
	<i>Transformational Leadership</i>		,107	1,665	,097
<i>(*p<0,05; **p<0,01; ***p<0,001) R2=0,071 F=11,516 p<0,001 (Model 4)</i>					

In accordance with the regression analyses results, research model is being shaped as it has been shown in Figure 1 below:

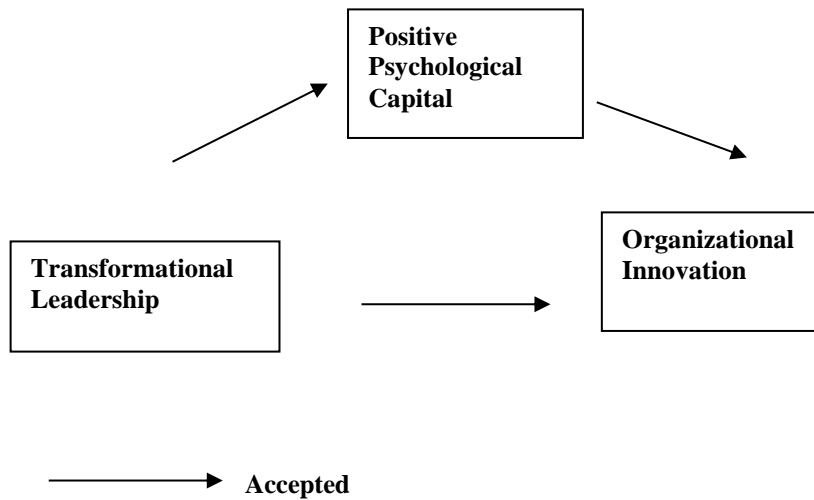


Figure 01. Final Research Model

5. Conclusion and Discussions

The leadership is very important for the organizations to adapt to the constantly changing external environment and to achieve organizational goals. In today's conditions, transformational leaders are the appropriate leaders in their organization's transformation. Another main goal of the organizations is sustainability, which refers to the capacity of being innovative.

In the process of harmonization of the organizations, it is necessary for the employees to adapt to the change process as well as the approach of the leaders to the employees. Change is only possible with employees who support change mentally and physically. Therefore, in this study, the relationship between the mediating role of the positive psychological capital and the organizational innovation of the transformational leadership style was examined. Transformational leadership style has an effect on the organizational innovation. This result supports the previous studies of Ziyae et al. (2015), Sartori et al. (2013), Wu and You (2011). The relationship between the mediating role of the positive psychological capital and the organizational innovation, which was not found in the literature, has been investigated. According to the result of the regression test, positive psychological capital has a mediating role in this relationship. This research is unique in the management literature in this respect. Besides, it is only the fact that this research is done at TSI and that the sample has not been reached at all and that participants are investigating the assumptions of the correctness of the answers given to the questionnaire. The sample for the future research could be useful for the employees developing a new product and carrying out research and development works since the independent variables can increase the impact on the organizational innovation.

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