THE EFFECT OF DEVELOPMENT CULTURE AND RATIONAL SUB-CULTURES ON WORK PERFORMANCE, THE MEDIATING ROLE OF OPENNESS TOWARD ORGANIZATIONAL CHANGE

Assoc. Dr. Özlem KÖROĞLU
ozlem.koroglu@toros.edu.tr
ORCID: 0000-0001-6710-3790

Prof. Dr. Abdullah ÇALIŞKAN
abdullah.caliskan@toros.edu.tr
ORCID: 0000-0001-5746-8550

ABSTRACT: Organizational culture affects many organizational variables, especially performance. In recent years, the role and importance of organizational culture in increasing job performance, which has an important place in organizational outputs, has been increasing. However, it is thought that various variables may have different contributions to this effect. With this research, the effect of organizational culture on the job performance of employees and the mediating role of openness toward organizational change in this effect were tried to be determined. In research conducted in the defense sector, explanatory findings were obtained by measuring the attitudes of 424 employees. As a result of the research, it was determined that development and rational culture, which are types of outward organizational culture, positively affect the work performance of employees and that openness toward organizational change has a mediating role in this effect.

Keywords: Development Culture, Rational Culture, Job Performance, Openness Toward Organizational Change, Mediating Effect,

GELİŞİM KÜLTÜRÜ VE RASYONEL ALT KÜLTÜRLERİN İŞ PERFORMANSINA ETKİSİ, ÖRGÜTSEL DEĞİŞİME AÇIKLIĞIN ARACILIK ROLÜ

ÖZ: Örgüt kültürü, başta performans olmak üzere birçok örgütsel değişkeni etkiler. Son yıllarda örgütsel çıktılarda önemli bir yere sahip olan örgüt kültürünün, iş performansının artırılmasındaki rolü ve önemi giderek artmaktadır. Ancak çeşitli değişkenlerin bu etkiye farklı katkıları olabileceği düşünülmektedir. Bu araştırma ile örgüt kültürünün çalışanların iş performansı üzerindeki etkisi ve bu etkide örgütsel değişime açıklığın aracılık rolü belirlenmeye çalışılmıştır. Savunma sektöründe yapılan araştırmada 424 çalışanın tutumları ölçülerek açıklayıcı bulgular elde edilmiştir. Araştırma sonucunda, dışa dönük örgüt kültürü altboyutları olan, gelişim ve rasyonel kültürün çalışanların iş performansını olumlu yönde etkilediği ve bu etkide örgütsel değişime açıklığın aracılık rolü olduğu tespit edilmiştir.

Anahtar Kelimeler: Gelişim Kültürü, Rasyonel Kültür, İş Performansı, Örgütsel Değişime Açıklık, Aracılık Etkisi

1. INTRODUCTION

As a result of the crises that are frequently experienced today, changes in the environment are also accelerating. These changes, which cause an increase in competition, also bring some risks for businesses. In this changing competitive environment, the issue of improving performance is becoming more and more important day by day in order for organizations to survive. Human resource, which is the most valuable resource for businesses, can cause performance decline and therefore failure for organizations when it is not properly motivated and managed effectively.

For this reason, directing all talents and powers of human resources toward organizational goals is an important critical success factor to increase organizational performance. Organizational culture is a variable that plays an essential role in achieving this success. Controlling the organizational culture in line with the realization of organizational goals and using it effectively, increasing the performance of the employees, and maximizing the organizational performance are among the essential duties of the managers (Andanut et al., 2015; Kim and Chang, 2019). Organizational culture affects many organizational variables, as well as the attitudes and behaviors of employees towards organizational change. The fact that employees are open to change and have desires and beliefs about the necessity of change causes their performance to increase (Wanger and Bannas, 2000; Schyns, 2004).

This study aims to examine the effect of development and rational culture on the job performance of the employees in the enterprises in the defense industry sector, and the mediating role of openness toward organizational change in this effect. In this context, in light of the data obtained from the variables discussed in the research, suggestions were made to managers and researchers by establishing a model compatible with the variables of development culture, rational culture, and openness toward organizational change in increasing work performance.

2. RESEARCH BACKGROUND AND HYPOTHESIS

In this empirical research, which was designed to determine the effect of development culture and rational culture on work performance in organizations and the mediating role of openness toward organizational change in this effect, the theoretical framework was first put forward and hypotheses were formed based on the literature. In this context, the relations between developmental culture, rational culture, and job performance were examined, and then the role of openness toward organizational change in these relations was examined.

2.1. Organizational Culture

Organizational culture is the set of values, rules, beliefs, attitudes, ideologies, assumptions, and expectations that bind employees together and are widely shared by employees (Kilmann, et al., 1985). Deshpande & Webster (1989) reviewed more than 100 studies in the field of organizational behavior, anthropology and sociology and defined organizational culture as "shared value and belief structures that enable employees to understand organizational behavior norms and organizational functions that provide them". Organizational culture is shaped by organizational practices. It affects the beliefs, behaviors, and attitudes of employees and all their activities within the organization. Organizational culture is an important element that aims and enables the employee to be successful in business life by guiding the attitudes and behaviors of individuals in the workplace or outside of work (Reeves and Bednar, 1994; Oudenhoven, 2001; Korte and Chermack, 2006; Krauss and Vanhove, 2022). Many studies emphasize that organizational culture is one of the determinants of low or high performance of individuals in the organization (Denison, 1990; Denison and Mishra, 1995; Gregory et al., 2009; Ubius and Alas, 2009; Haffar et al., 2021). On the other hand, when a new strategy or program is desired to be implemented against the existing cultural norms and values within the organization, the opposing force of the culture can be faced (Daft, 2004).

The idea that organizational subcultures can play an important role in the success of the business and employee, as well as organizational culture, causes the research in the field of organizational behavior to focus on the subject of subculture. Subculture is defined as understanding and practices that include different understandings and behaviors in organizations, differ significantly from organizational culture, and emerge based on work units, the hierarchical structure of the organization, or social activities (Field, 1998; Trice and Morand, 1991). Subcultures affect the success of institutions with their similarities and

differences with organizational culture. Moreover, if it is in conflict with the dominant culture or general goals of the organization, it becomes a critical situation that weakens the organization and undermines its foundation. (Luthans, 1992; Chan et al., 2004).

Organizational culture has been discussed in four different dimensions: rational culture and development culture with an external focus, and hierarchical and group culture with an internal focus (Quinn and Spreitzer, 1991). In this study, development culture and rational culture, which are external-focused organizational culture sub-dimensions, are examined.
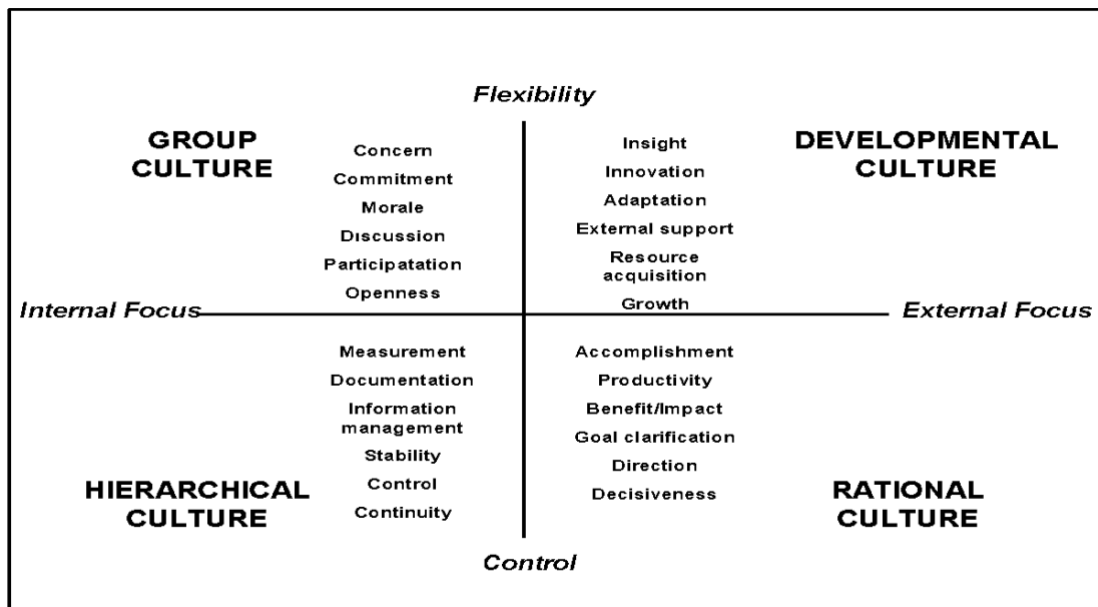

Figure 1. Organizational Culture's dimensions (Denison and Spreitzer, 1991; McDermott and Stock, 1999; Škerlavaj et al., 2010)

Developmental culture and rational culture are sub-dimensions of externally focused organizational culture. Developmental culture is based on flexibility values and rational culture is based on control values (Quinn, 1988).

2.1.1. Developmental Culture

The development culture is a flexible organizational culture that encourages employees during the growth of the organization and the acquisition of new resources. The development culture focuses on development, flexibility and the external environment (Deshpande and Webster, 1989; Deshpande and Farley, 2004). The main elements of this focus are innovation, insight, external support, adaptation, resource acquisition, and the growth (Quinn, 1988; Deshpande and Webster, 1989; Denison and Spreitzer, 1991; Škerlavaj et al., 2010). The development culture is an organizational subculture that contributes positively to the motivation of employees about learning (Scott et al., 2003; Lok et al., 2005). It can be said that the employees in the enterprises where these cultural values are dominant are individuals who can take risks, develop a vision, and are open to change. (Denison and Spreitzer, 1991).

2.1.2. Rational Culture

Rational culture, which is inclined to the control values of organizational culture, is based on productivity, accomplishment, benefit/impact, goal clarification, direction and decisiveness. Subcultures with these values support strict transaction controls, highly structured communication channels, and limited information flow. Rational culture is based on profitability and efficiency. In this culture; planning, efficiency, and goal clarity are of primary importance (Burns and Stalker, 1961). In rational culture, there is a centralized and control-oriented approach. Organizations with a rational culture show an approach

based on success, efficiency, benefit, clarity of goals, determination and direction. In this culture, goals control attitudes towards the external environment. This culture; strives to achieve efficiency and success with clear targets. In addition, motivation factors in this culture include expertise and the willingness and determination to achieve predetermined goals. (Skerlavaj et al., 2010; Quinn, 1988; Denison and Spreitzer, 1991). Individuals in the organization must perform the given tasks within the framework of the instructions and adhere to the organizational plan.

2.2. Openness Toward Organizational Change

Change management is the whole process of making use of the talents, knowledge, and personality traits of people at all levels during the efforts to develop all managerial and organizational attitudes that play a role in integrating an organization with its environment and gaining flexibility in which it can quickly adapt to the changes occurring in its environment (Çalışkan, 2007). To successfully manage change management practices in organizations, employees must have desires and beliefs about the necessity and applicability of changes. (Wanger and Bannas, 2000; Schyns, 2004; Augustsson et al., 2017; Çalışkan, 2019). Effective management of employees' perceptions of change management is essential to success in change initiatives (Armenakis and Bedeian, 1999; Martin et al., 2005; Chen and Wang, 2007; Cho et al., 2011; Jeong, et al., 2016). Because, in an institution dominated by an organizational culture that is hesitant about the necessity of change and is not open toward change, it cannot be expected that the change efforts will succeed.

Openness toward change is defined as a combination of willingness to contribute to change and positive influence on the possible outcomes of change (Miller et al., 1994). Openness toward organizational change can be expressed as how open, flexible and adaptable people are to new ideas (Axtell et al., 2002; Hinduan, 2009; Janićijević, 2012). It has been suggested that openness toward change, which includes the willingness to adapt and accept change, is a necessary initial condition for successful change management in organizations, since employees' beliefs, attitudes and behaviors significantly affect the change management process and its results (Miller et al., 1994; Devos et al., 2007; Nielsen and Randall, 2013).

Creative, curious, and sensitive individuals tend to be open to change. Researches on this subject show that the existence of an organizational culture that supports openness toward change within the organization positively affects the work performance of the employees (Mahajan et al., 2012; Lee et al., 2018; Çalışkan, 2021).
.

2.3. Job Performance

Performance is the attitude that employees must do to fulfill their duties and contribute to the goals of the organization (Rotundo and Sackett 2002; Lu et al., 2015; Lovely et al., 2019). It is the extent to which employees can accomplish their tasks in the organization. In other words, they are the outputs obtained as a result of the task. Performance is considered as an indicator of the effective and productive working of organizations and employees (Menges et al., 2017; Shafique et al., 2018). Job performance, on the other hand, is defined as the productivity level of work-related behaviors and outputs of an employee, in return for a certain wage, compared to their equivalent employees (Kohli, 1985; Rousseau and McLean, 1993; Setyaningrum et al., 2017). Job performance is expressed as the whole of the behaviors that employees show in order to take action, strive and reach the goal in line with the goals of the organization (Williams and Anderson, 1991; Syamsir, 2020). Job performance includes written tasks for individuals to achieve the goals of the organization, including planning, organizing, managing subordinates, providing motivation and similar administrative tasks (Diaz-Vilela et al., 2015; Latif et al., 2017). In addition, it is also related to the fact that the employees do things other than their unwritten duties voluntarily, work with the group, obey the organizational culture and adopt the goals of the organization (Sykes and Venkatesh, 2017; Wu et al., 2017).

Improving performance is as important for organizations as it is for individuals. The fact that individuals fulfill what is required of them and be successful creates a source of self-confidence and satisfaction for themselves. In addition, improving job performance is a key condition for desirable personal outcomes such as higher income, a better career, and social reputation (Sonnentag and Freese, 2002). The level of achievement of the goals and achievements of organizations and businesses is directly related to the performance of the employees in the organization. Organizations need high-performing employees in

order to provide sustainability and competitive advantage. It is a source of self-confidence, happiness and satisfaction for the employee, as well as fulfilling the expectations of the employee as necessary, being successful; It can be said that personal results such as job performance, a better career, higher income and social reputation are also the main antecedents (Çalışkan, 2018).

2.4. Relationship Between Organizational Culture, Openness Toward Organizational Change and Job Performance

Organizational culture affects factors such as the hierarchical structure and hierarchical relations within the organization, the structure of the organization, its size, remuneration policies and salary levels within the organization, relations with colleagues, the management approach of the organization, the leadership capacity and leadership behavior type of managers, and the processes of participation in decisions by the members of the organization (Kim et al., 2018).

Development culture; It is an organizational culture that is based on innovation, adaptability, constructivism, and growth (Burns and Stalker, 1961) and contributes positively to the motivation of the organization and its employees regarding change, development, and innovation (Scott et al., 2003; Lok et al., 2005). The development culture is based on the values listed as openness, naturalness, responsiveness, change, and adaptability. Rational culture, on the other hand, is based on profitability and efficiency. In this culture; planning, efficiency, and goal clarity are of primary importance (Burns and Stalker, 1961).

In this part of the study, as a result of the literature review; the relationships between the concepts of organizational culture, openness toward organizational change, and job performance have been examined by looking at empirical studies and hypotheses have been put forward:

Akkoç et al. (2011) discussed the development culture together with the support of the leader and investigated the mediating role of work-family conflict in the formation of innovative behaviors and the effect of these concepts on job performance. As a result of the research, they concluded that the culture of development enables the formation of innovative behaviors in employees and affects the performance of employees. Ogbonna and Harris (2000) investigated whether there are relationships between organizational cultures, leadership styles and organizational performance of businesses in the UK. As a result of the research, it was determined that there is a positive relationship between organizational culture and organizational performance.

Prajogo & McDermott (2011) measured the relationship between multidimensional organizational culture and performance in their study. The sub-dimensions of these two variables were also included in the study. In the research, it was determined that there is a significant, positive and high relationship between development culture and product development and business process development. It was concluded that there is a positive, significant and high relationship between rational culture and business process quality. Akkoç et al. (2012) examined the effect of development culture on business performance with 346 employees working in the software business within the scope of the mediating role of the concept of trust. As a result of the analyses made, it was concluded that the culture of development affects business performance and trust is an important factor in this effect. Ahmad (2012) examined the effect of organizational culture on performance management in his research. According to the analysis results of the research, it has been determined that there is a positive, significant and strong relationship between organizational culture and performance management.

Mujeeb et al. (2011) revealed the relationships between organizational culture and performance management practices in the sample of Pakistan University. As a result of the analysis of the research data, it has been determined that there is a positive, significant and strong relationship between organizational culture and performance management practices. In the study conducted by Jacobs et al. (2013), the relationship between organizational culture and performance in hospitals was examined. According to the general opinion reached as a result of the research, the performances of organizations with strong cultural structures are also high. Tseng and Lee (2009) found in their study that leaders in a rational culture focus on organizational innovation, and that development culture and rational culture have a positive effect on organizational performance, development and participation of employee relations.

In a study conducted by Çalışkan and Kater (2020), the effects of organizational culture and its sub-dimensions, development culture, rational culture, group culture and hierarchical culture, on organizational performance were examined. In addition, the mediating role of organizational learning climate in this effect was also investigated. According to the results of the research, it was determined that

there are positive and significant relationships between organizational culture, organizational performance and organizational learning climate variables. It has been observed that the organizational learning climate plays a mediating role between the variables.

In a study by Goula et al. (2021), significant relationships were found between organizational culture and change efforts. When culture is controlled in line with organizational goals, it appears to provide support for change management efforts. It is stated that negative attitudes towards change negatively affect employees' job satisfaction, trust, and commitment to the organization, and performance (Burke and Biggart, 1997; Bouckenooghe, 2010; Carter et al., 2013; Klein et al., 2017).

It is understood from these studies that both organizational culture and subcultures are important factors affecting job performance. In this context, positive relationships are expected between development culture, rational culture, openness toward organizational change and job performance. The hypotheses developed to test these relationships based on theory and empirical research are presented below.

Hypothesis 1: The development culture has positive and significant effect on the job performance of the employees.

Hypothesis 2: The rational culture has positive and significant effect on the job performance of the employees.

Hypothesis 3: The development culture has positive and significant effect on the employees' openness toward organizational change.

Hypothesis 4: The rational culture has positive and significant effect on the employees' openness toward organizational change.

Hypothesis 5: The openness toward organizational change has positive and significant effect on the job performance of the employees.

Hypothesis 6: The openness toward organizational change has a mediating role in the effect of the development culture on job performance.

Hypothesis 7: The openness toward organizational change has a mediating role in the effect of the rational culture on job performance.

The research model and hypotheses created based on the theory and empirical studies are presented in Figure 1.
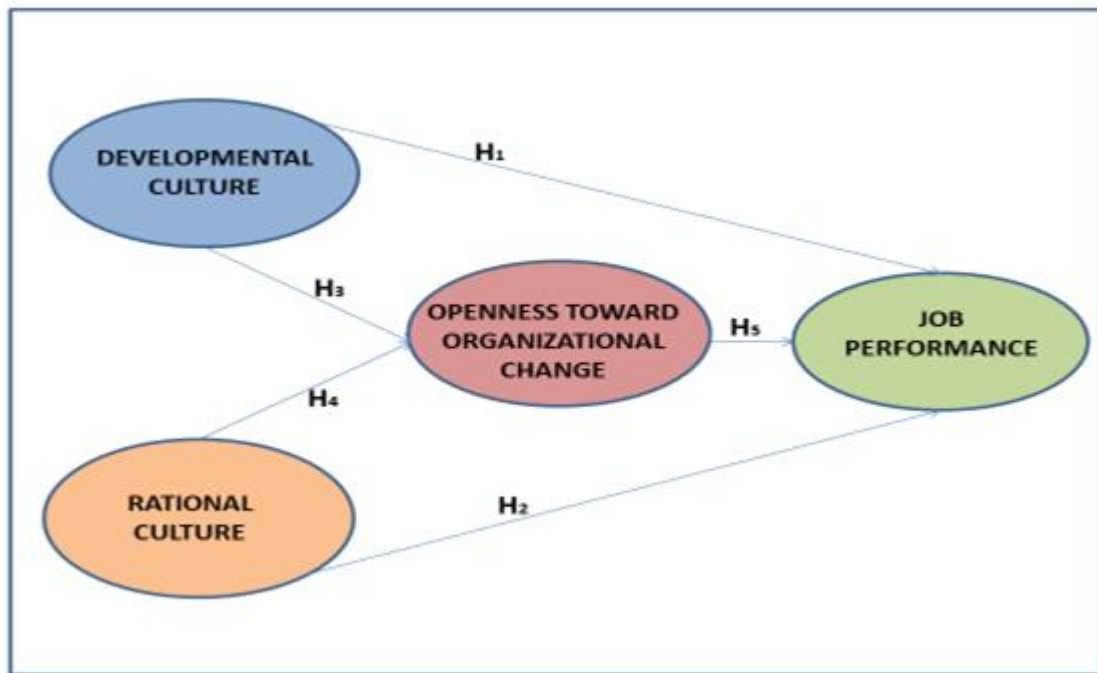
Figure 2. Research Model and Hypotheses

3. METHOD

This research aims to determine the effect of developmental culture (DC) and rational culture (RC) on job performance (JP) and the mediating role of openness toward organizational change (OTOC) in this effect. In the research, first, information about the sample and scales is given. Then, analyzes are made regarding the model created in the light of the data obtained from the sample. In this context, firstly, confirmatory factor analysis of each variable is made, and then correlations between variables are determined. Hypotheses and mediation effect are tested with hierarchical regression analysis. The findings obtained as a result of all this analyzes are compared with the existing literature and suggestions are made to managers and researchers.

3.1. Data

The research universe consists of enterprises operating in the defense industry sector in Ankara. In this sample, approximately, 15000 people work. The sample size was calculated as 384 people, taking into account a 5% margin of error within the 95% confidence limit from the main population (Sekaran, 1992). In this context, it is planned to conduct a survey to a total of 700 people randomly selected by convenience sampling method. Of the sent questionnaires, 442 were returned and 424 were found suitable for analysis. 39.4% of the participants (n=167) were women and 55.9% (n=237) were married. 58.0% (n=246) of the employees have a bachelor's degree, 32.5% (n=138) have a master's degree, and 9.4% (n=40) have a doctorate degree. The average age of the sample was 32.6 years, and the average working time was 8.2 years.

3.2. Measures

Information on the scales used in this research, which aims to determine the effect of developmental culture (DC) and rational culture (RC) on job performance (JP) and the mediating role of openness toward organizational change (OTOC) in this effect, is given below. Table 1 presents the measurements used in the research. The Cronbach's alpha reliability coefficients of the scales were analyzed with the SPSS package program, and the confirmatory factor analyzes were analyzed with the Amos program.

3.2.1. Development Culture (DC) and Rational Culture (RC) Measurement: The 8-point development culture measurement and 4-point rational culture measurement, which are developed by Quinn and Spreitzer (1991), Wang and Shyu (2003), and used by Tseng and Lee (2009), are used in the research. The questions in the development culture are "The company I work for focuses on productivity and creativity." and "The company I work for focuses on productivity and creativity.". The questions, however, in the rational culture measurement are "Our business focuses on achieving its goals in the competitive market." and "Our business focuses on competition and competitors.". The answers in the scale is taken with the 5-point likert scale (1=Strongly disagree, 5=Strongly agree). The Turkish validation of the scale was carried out by Akkoç et al. (2012b). The reliability analyses performed by Tseng and Lee (2009) showed that the Cronbach alpha reliability coefficient was .73 for the developmental culture scale and .74 for the rational culture scale. As a result of the reliability analyses Akkoç et al. (2012b) performed, the Cronbach alpha reliability coefficient for the developmental culture scale was . 86, and .76 for the rational culture scale.

Confirmatory factor analysis was performed to test the construct validity of the developmental culture and rational culture scales. As a result of the analysis, it was determined that the data conformed to the two-factor structure of the externally oriented organizational culture scale. As a result of the analysis, it was determined that the factor loads of the 8-item developmental culture scale were between .72 and .79, and the factor loads of the 4-item rational culture scale were between .68 and .74. Goodness-of-fit values of the scale are presented in Table 2 together with those of the other scales. As a result of the reliability analysis, the total Cronbach alpha reliability coefficient of the external focused organizational culture scale was .94, the development culture sub-dimension .92, and the rational culture sub-dimension .86.

3.2.2. Openness Toward Organizational Change Scale: In order to measure the level of openness toward organizational change of employees, the scale of openness toward organizational change developed by Çalışkan (2022) was used. The scale consists of 6 items. The questions on the scale are "Change will help improve undesirable situations in the institution." and "I think I am open to changes in my workplace.". The answers were taken on a 5-point Likert scale (1 = I strongly disagree, 5 = I strongly agree). As a result of the reliability analyses conducted by Çalışkan (2022), the Cronbach's alpha reliability coefficient was determined as .85 for the first sample, .86 for the second sample, and .92 for the third sample.

In this study, confirmatory factor analysis was performed to test the construct validity of the scale. As a result of the factor analysis, it was determined that the data were compatible with the single factor structure of the scale and the factor loads were between .83 and .89. As a result of the reliability analysis, the Cronbach alpha reliability coefficient of the scale was found to be .94.

3.2.3. Job Performance Scale: The job performance scale used by Kirkman and Rosen (1999) and later by Sigler and Pearson (2000) was used to measure the job performance of employees. The questions on the scale consisting of four questions are "I make sure that products meet or exceed quality standards." and "I respond quickly when problems come up.". The reliability coefficient of the scale was above .70 in both studies. The reliability coefficient of the scale applied to academicians by Çöl (2008) in Turkey was determined as .82. In the research, the answers were taken on a 5-point Likert scale (1=I strongly disagree, 5=I strongly agree).

As a result of the confirmatory factor analysis, it was determined that the scale had a single factor structure and factor loads were between .78 and .86. The Cronbach alpha reliability coefficient of the scale

was determined as .96.

Table 1. The Mesaurements

Development Culture (DC) Quinn and Spreitzer (1991), Wang and Shyu (2003), Tseng and Lee (2009), ❖ Our company emphasizes on creativity for the new productivity and service. ❖ Out company emphasizes the new product for RveD is the centripetal force. ❖ Our company flexibly gets the new challenge. ❖ Our company emphasizes the CEO is good at reform and risk. ❖ Our company emphasizes the style of CEO is full of originality. ❖ Our company adopts the creative idea to make the decision. ❖ Our company emphasizes the employee has the courage to the new change. ❖ Our company focus the employee who tests the new one.
Rational Culture (RC) Tseng (1988), Quinn and Spreitzer (1991), Wang and Shyu (2003), Tseng and Lee (2009), ❖ Our company focus on the competitive market to finish the target. ❖ Our company focus on the competition and compare each other. ❖ Our company emphasizes the manager is good at the gold setting and push employee achieve. ❖ Our company emphasizes the manager places importance on the productivity.
Job Performance (JP) Kirkman and Rosen (1999), Sigler and Pearson (2000), ❖ I complete my tasks on time. ❖ I meet or exceed my goals. ❖ I make sure that products meet or exceed quality standards. ❖ I respond quickly when problems come up.
Openness Toward Organizational Change (OTOC) Çalışkan (2022), ❖ I think I am open toward changes in my workplace. ❖ Change will help improve undesirable situations in the institution. ❖ I think the change will affect my performance positively. ❖ I believe that my organization can achieve the desired goals through change. ❖ I will do my best to support change. ❖ The change will benefit the institution.

Table 2. Goodness of Fit of the Measure Values in Consequence of Confirmatory Factor Analysis

Variables	X^2	df	CMIN/DF <5	GFI >.85	AGFI >.80	CFI >.90	NFI >.90	TLI >.90	RMSEA <.08
1. External Focused Organizational Culture (EFOC)	12.8	3.76	3.4	.91	.94	.96	.97	.96	.03
2. Openness Toward Organizational Change (OTOC)	82.5	34.4	2.4	.93	.95	.98	.98	.97	.02
3. Job Performance (JP)	45.1	37.9	1.2	.93	.93	.97	.97	.986	.02

Note: Goodness of fit value ranges are arranged according to "**acceptable**" standards.

3.3. Empirical Results

The data obtained as a result of the research were analyzed in SPSS and Amos programs. In this context, in the first stage, the averages, standard deviations, and correlations between the data obtained regarding the development culture, rational culture, openness to organizational change, and job performance perceived by the participants were examined. The means, standard deviations, and correlation

values obtained as a result of these analyses are given in Table 3.

Table 3. Mean, Standard Deviation and Correlation Values for the Data

	Mean	**S.D.**	**1**	**2**	**3**	**4**	**5**
1. EFOC	3.87	.84	(.94)				
2. DC	3.83	.86	.95**	(.92)			
3. RC	3.90	.90	.95**	.81**	(.86)		
4. OTOC	3.90	.99	.81**	.79**	.75**	(.94)	
5. JP	3.66	1.22	.73**	.72**	.67**	.74**	(.96)

** p< .01

As seen in Table 3, there are significant relationships between all dependent and independent variables in the study. Therefore, significant effects can be predicted between the variables.

In order to determine whether a multicollinearity problem is available in the model, the collinearity is also controlled. The obtained tolerance and VIF values confirm that there is not a multicollinearity problem between the independent variables (Tolerance > .2, VIF < 10).

A three-stage regression analysis proposed by Baron and Kenny (1986) was conducted to explain the effects of developmental culture (DC) and rational culture (RC) on job performance (JP), and the mediating role of organizational openness to change (OTOC) in this effect. According to this method, the independent variable must have an effect on the dependent variable and the mediating variable. When the mediator variable is included in the regression analysis together with the independent variable, the regression coefficient of the independent variable on the dependent variable should decrease, while the significant effect of the mediating variable on the dependent variable should continue. In this context, in order to determine the mediating role of openness to organizational change, the relationships between DC-OTOC, JP, and RC-OTOC, JP were examined through hierarchical regression analyzes and Sobel tests were performed. The findings regarding the mediation test are given in Table 4 and Table 5.

Within the scope of the mediation test, the relationships between independent variable development culture and job performance were examined in the first stage. In the first step of this stage, it was seen that DC significantly affected JP (β= .72, p<.01). In the second step, the effect of DC on OTOC, whose mediation was investigated, was examined. As a result of the analysis, it was determined that DC significantly affected OTOC (β= .79, p<.01). The effects of OTOC, whose mediation was investigated in this step, on JP were also reported. It was found that OTOC significantly affected JP (β= .74, p<.01). In the last step of this stage, DC and OTOC, whose mediation was investigated, were analyzed together and their effects on JP were examined. As a result of this analysis, the effect of DC on JP continued and decreased (β=.35, p<.01) with the introduction of DC into the analysis together with OTOC, while the effect of OTOC on JP continued (β=.48, p<.01). After these conditions were met, the Sobel test was performed to confirm the mediating effect, and Sobel(z) was found to be significant (z=7.6, p<.01). This finding shows that OTOC plays a partial mediation role in the effect of DC on JP. As a result of this section analysis, it is seen that ***H1, H3, H5, and the mediation hypothesis H6 are supported.***

In the second stage of the mediation test, the relations between the other independent variable rational culture and job performance were examined. In the first step of this stage, it was seen that RC significantly affected JP (β=.67, p<.01). In the second step, the effect of RC on OTOC, whose mediation was investigated, was examined. As a result of the analysis, it was determined that RC significantly affected OTOC (β= .75, p<.01). In the last step of this stage, RC and OTOC, whose mediation was investigated, were analyzed together and their effects on JP were examined. As a result of this analysis, the effect of RC on JP continued and decreased (β=.25, p<.01) with the introduction of RC in the analysis together with OTOC, while the effect of OTOC on JP continued (β=.55, p<.01). After these conditions were met, the Sobel test was performed to confirm the mediating effect, and Sobel(z) was found to be significant (z=8.2, p<.01). This finding shows that OTOC plays a partial mediation role in the effect of RC on JP. As a result

of this section analysis, it is seen that ***H2, H4 and the mediation hypothesis H7 are supported.***

Table 4. Mediation Test Results

		β	
		OTOC	**JP**
DC	**Step 1**		
	Age		-.02
	W. Time		.03
	DC		**.72****
	Adjusted R²		.51
	ΔR²		.51
			(F=445**)
	Step 2		**OTOC→JP**
	Age	.12	.04
	W. Time	.09	.08
	DC	**.79****	**.74****
	Adjusted R²	.62	.55
	ΔR²	.62	.55
		(F=683**)	*(F=521**)*
	Step 3		
	Age		.04
	W. Time		.06
	DC		**.35****
	OTOC		**.47****
	Adjusted R²		.12
	ΔR²		.12
			(F=313**)
	Sobel Test(z)	***7.6****	

** p< .01

Table 5. Mediation Test Results

		β	
		OTOC	**JP**
RC	**Step 1**		
	Age		.11
	W. Time		.08
	RC		**.67****
	Adjusted R²		.44
	ΔR²		.44
			(F=336**)
	Step 2		
	Age	.14	
	W. Time	.12	
	RC	**.75****	
	Adjusted R²	.56	
	ΔR²	.4956	
		(F=526**)	
	Step 3		
	Age		.08
	W. Time		.06
	RC		**.25****
	OTOC		**.55****
	Adjusted R²		.06
	ΔR²		.06
			(F=291**)
	Sobel Test(z)	*8.2***	

** p< .01

4. Discussion and conclusion

With this study, an applied research on defense sector employees operating in Ankara was investigated, the effect of external-oriented organizational culture types, development culture and rational culture, on the job performance of employees and the mediating role of openness toward organizational change in this effect. In this study, the effects of the variables included in the analysis on job performance were studied with hierarchical regression analysis. With the research conducted, explanatory findings regarding the relationship between external-oriented organizational culture and work performance regarding defense sector employees were reached.

When the results of the analysis were examined, it was determined that the development culture and rational culture, which are external-oriented organizational culture types, were related to work performance and increased work performance positively and significantly. This finding is consistent with similar studies (Ogbonna and Harris, 2000; Prajogo and McDermott, 2011; Akkoc et al. 2011; Mujeeb et al., 2011; Akkoc et al. 2012; Ahmad, 2012; Jacobs et al., 2013; Tseng and Lee, 2009; Çalışkan and Kater, 2020). The source of the effect of both cultures on business performance in the same direction and at an approximate level is evaluated as the fact that both cultures are external-oriented and focus on flexibility, change and environmental compatibility that encourages employees. In addition to all these, beliefs and values belonging to the organizational culture that is widely accepted in businesses may not only consist of beliefs and values belonging to a sub-culture dimension. As a matter of fact, the organizational culture of the enterprises can include more than one subcultural value. For this reason, it is thought that both the development culture and the rational culture values may coexist in the enterprises considered as a sample,

and therefore, the interaction of both subcultures may create similar results in business performance.

It has been determined that openness toward organizational change is related to external-oriented organizational culture and job performance, and it increases job performance positively and significantly. This finding is consistent with similar studies (Burke and Biggart, 1997; Bouckenooghe, 2010; Carter et al., 2013; Klein et al., 2017; Goula et al., 2021). It has been revealed that organizational culture plays an important role in adapting individuals to the dynamic and challenging change management process and that the desired development and orientation of employees' attitudes and behaviors towards change is an important factor in increasing performance.

It is thought that the development culture and rational culture have an effect on the job performance of the employees, and this effect may be reflected in the output variables through some variables. From this point of view, the mediating role of openness toward organizational change in the effect of developmental culture and rational culture on job performance has been investigated. From the findings obtained in this context, it has been determined that openness toward organizational change has a mediating role in the effect of both developmental culture and rational culture on job performance.

As a result, it has been revealed that both the development culture and the rational culture existing in the enterprises are important variables in increasing the work performance of the employees. It is an important finding obtained in this study that the performance that needs to be increased in order to gain a competitive advantage in today's businesses can be realized more effectively through variables such as openness toward organizational change, as well as creating external-oriented organizational cultures. In this context, it can be suggested to the leaders and managers that if the values and beliefs of the development and rational culture in the enterprises become more evident, the job performance exhibited by the employees will increase, and if the openness toward organizational change is supported, their job performance will emerge more easily.

This research has some limitations. The fact that the research was conducted only in the defense sector is an important limitation of the research. If other sectors are included in the research in future studies, it can make the findings obtained in this study more meaningful. Another limitation of the study is that only external-oriented organizational culture types were included in the study. The reason for this is that both cultures are externally oriented and focus on the business environment. However, in future studies, it is thought that considering internal-oriented organizational cultures together with compatible variables will allow more explanatory findings to be obtained. Another important limitation of the study is that it is not longitudinal. It is considered that the research results to be obtained in intermittent periods can be more explanatory.

REFERENCES

Ahmad, M. S. (2012). Impact of organizational culture on performance management practices in Pakistan. *Business Intelligence Journal, 5*(1).

Akkoç İ., Çalışkan A. and Turunç Ö. (2011). Gelişim kültürü ve lider desteğinin yenilikçi davranış ve iş performansına etkisi: iş-aile çatışmasının aracılık rolü. *İş Güç: Endüstri İlişkileri ve İnsan Kaynakları Dergisi, 13*(4): 83-114.

Akkoç İ., Çalışkan A. and Turunç Ö. (2012a). The effect of development culture and perceived organizational support to the job satisfaction and job performance: the mediating role of trust. *Celal Bayar University The Faculty of Economic and Administrative Sciences, Journal of Management and Economics;19*(1):105–135.

Akkoç İ., Çalışkan A. and Turunç Ö. (2012b). Örgüt kültürünün girişimciliğe etkisinde öz yeterliliğin düzenleyici rolü. *İş, Güç Endüstri İlişkileri ve İnsan Kaynakları Dergisi, 14*(3):19-42.

Andanut, M., Fraticiu L., and Mihaescu, D. (2015). Culture-civilization-organizational culture and managerial performance. *Procedia Economics and Finance, 27,* 69-72.

Armenakis, A.A., and Bedeian, A. G. (1999). Organizational change: a review of theory and research in the 1990s. *Journal of management, 25*(3), 293–315. https://doi.org/10.1177/014920639902500303

Augustsson, H., Richter, A., Hasson, H., and Von Thiele Schwarz, U. (2017). The need for dual openness to change: A longitudinal study evaluating the impact of employees' openness to organizational change content and process on intervention outcomes. *The Journal of Applied Behavioral Science, 53*(3), 349–368. https://doi.org/10.1177/0021886317691930.

Axtell, C., Wall, T., Stride, C., Pepper, K., Clegg, C., Gardner, P. and Bolden, R. (2002). Familiarity breeds content: The impact of exposure to change on employee openness and well-being. *Journal of occupational and organizational psychology, 75*(2), 217-231.

Baron, R.M. and Kenny, D.A. (1986), The Moderator–Mediator Variable Distinction İn Social Psychological Research: Conceptual, Strategic, And Statistical Considerations. *Journal Of Personality And Social Psychology, 51*, 1173–1182.

Bouckenooghe, D., Devos, G., and Van den Broeck, H. (2009). Organizational change questionnaire– climate of change, processes, and readiness: *Development of a new instrument. Journal of Psychology, 143*(6), 559–599.

Burke, W.W., and Biggart, N. (1997). Interorganizational relations. In D. Druckman, J. E. Singer, and H. Van Cott (Ed.), Enhancing organizational performance. *Washington, DC: National Academies Press* 120-149.

Burns, T. and Stalker, G.M. (1961), The Management of Innovation. *London: Tavistock Publications.*

Carter, M.Z., Armenakis, A.A., Feild, H.S., and Mossholder, K.W. (2013). Transformational leadership, relationship quality, and employee performance during continuous incremental organizational change. *Journal of Organizational Behavior, 34*(7), 942-958. doi:10.1002/job.1824

Chan, L.L.M., Shaffer, M.A. and Snape, E. (2004). In Research of Sustained Competitive Advantage: The Impact Of Organizational Culture, Competitive Strategy And Human Resource Management Practices On Firm Performance, *International Journal of Human Resource Management, 15*(1), 17-35.

Chen, J., and Wang, L. (2007). Locus of control and the three components of commitment to change. *Personality and Individual Differences, 42*(3), 503–512.

Cho, S. W., and Na, S. I. (2011). The causal relationship among teachers' commitment to change, efficacy, school climate, and principals' transformational leadership in specialized vocational high schools. *Journal of Agricultural Education and Human Resource Development, 43*(1), 1–25.

Çalışkan A. (2007). Organizasyonel Değişim Yönetimi ve Azerbaycan Cumhuriyeti'ndeki Türk Menşeli İşletmelerde Bir Uygulama, Isparta: *Süleyman Demirel Üniversitesi, Sosyal Bilimler Enstitüsü, Yayınlanmamış Doktora Tezi, Isparta.*

Çalışkan, A. (2018). Dönüşümcü Liderliğin İş Performansına Etkisi: Lider Üye Etkileşimi ve Örgütsel Bağlılığın Aracılık Rolü, *Toros Üniversitesi İİSBF Sosyal Bilimler Dergisi, 5*(8), 104-140.

Çalışkan, A. (2019). Değişime direnç: Bir ölçek uyarlama çalışması, *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 24*(2), 237-252.

Çalışkan, A. (2021). Örgütsel Güven. Bir Ölçek Geliştirme Çalışması. *Antalya Bilim Üniversitesi Uluslararası Sosyal Bilimler Dergisi, 2*(1): 42-59.

Çalışkan, A. (2022). Örgütsel Değişime Açıklık: Bir Ölçek Geliştirme Çalışması. *Aksaray Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 14* (2), 191-202. DOI: 10.52791/aksarayiibd.1069524

Çalışkan, A. and Kater, S.F. (2020). Mersin Organize Sanayi Bölgesi işletmelerinde örgüt kültürünün örgütsel performansa etkisi ve örgütsel öğrenme ikliminin aracılık rolü üzerine bir araştırma, *Toros Üniversitesi İİSBF Sosyal Bilimler Dergisi, 7*(12), 170-198.

Çöl, G. (2008). Algılanan Güçlendirmenin İşgören Performansı Üzerine Etkileri, *Doğuş Üniversitesi Dergisi, 9*(1), s. 35-46.

Daft, R.L. (2004). Organizational Theory and Design. 8th Edition, *Southwestern Educational Publishing, Cincinnati.*

Denison, D.R., Spreitzer, G.M. (1991). Organizational culture and organizational development: a competing values approach. *Research in Organizational Change and Development, 5*, 1-21.

Denison, D. and Mishra, A.K. (1995). Toward a Theory of Organizational Culture and Effectivesness, *Organization Science, 6*(2), 204-223.

Deshpande, R, Farley J.U. and Webster, Jr.F.E. (1993). Corporate Culture, Customer Orientation, and Innovativeness in Japanese Firms: A Quadrad Analysis. *Journal of Marketing, 57*(1), 23-37.

Deshpande, R. and Webster, Jr.F.E. (1989). Organizational Culture and Marketing: Defining the Research Agenda, *Journal of Marketing, 53*, 3-15.

Deshpande, R. and Farley, J.U. (2004). Organizational Culture, Market Orientation, Innovativeness, and Firm Performance: An International Research Odyssey, *International Journal of Research in Marketing, 21*(1), s. 3–22.

Devos, G., Buelens, M., and Bouckenooghe, D. (2007). Contribution of content, context, and process to understanding openness to organizational change: Two experimental simulation studies. *Journal of Social Psychology, 147*(6), 607–630.

Díaz-Vilela, L.F., Rodríguez, N.D., Isla-Díaz, R., Díaz-Cabrera, D., Hernández- Fernaud, E. and Rosales-Sánchez, C. (2015). Relationships between contextual and task performance and interrater agreement: Are there any? *PloS One, 10*(10), 1-13.

Goula A, Stamouli M-A, Latsou D, Gkioka V and Kyriakidou N. (2021). Learning organizational culture in greek public hospitals. *International Journal of Health Research and Innovation, 6*(1), 1-9.

Gregory B.T. and Harris S.G., Armenakis A.A., Shook C.L. (2009). Organizational culture and effectiveness: A study of values, attitudes, and organizational outcomes, *Journal of Business Research, 62*, 673–679.

Haffar, M., Al-Hyari, K.A., Djebarni, R., Al-Shamali, A., Abdul Aziz, M. and Al-Shamali, S. (2021). The myth of a direct relationship between organizational culture and TQM: propositions and challenges for research, *The TQM Journal, Vol. ahead-of-print No. ahead-of-print.* https://doi.org/10.1108/TQM-06-2020-0138

Hinduan Z.R., Wilson-Evered E., Moss S. and Scannell, E. (2009). Leadership, work outcomes and openness to change following an Indonesian bank merger. *Asia Pac. J. Hum. Res. 47*(1), 59-78.

Jacobs, R., Mannion, R., Davies, H. T. O., Harrison, S., Konteh, F. and Walshe, K. (2013). The Relationship Between Organizational Culture and Performance in Acute Hospitals, *Social Science and Medicine, 76*, 115-125.

Janićijević, N. (2012). The Influence of Organizational Culture on Organizational Preferences towards the Choice of Organizational Change Strategy. *Economic Annals, 57*(193), 25-51.

Jeong, S., Hsiao, Y., Song, J. H., Kim, J., and Bae, S.H. (2016). The moderating role of transformational leadership on work engagement: The influences of professionalism and openness to change. *Human Resource Development Quarterly, 27*(4), 489–516. https://doi.org/10.1002/hrdq.21

Kilmann, R.R.; Saxton, M.J. and Sepra, R., (1985). Five Key Issues İn Understanding And Changing Culture, Gaining Control Of The Corporate Culture, Ralph H. Kilman (Ed.), *Jossey-Bass.,* 1-16.

Kim, S.S., Donghoon, S., Heather, C.V., Patricia, F.H. and Christian, V. (2018). How do callings relate to job performance? The role of organizational commitment and ideological contract fulfillment. *Human Relations*, 1-19.

Kim, T. and Chang, J. (2019). Organizational culture and performance: a macro-level longitudinal study, *Leadership ve Organization Development Journal, 40*(1), 65-84. https://doi.org/10.1108/LODJ-08-2018-0291

Kirkman, B.L. and Rosen, B. (1999). Beyond Self-Management: Antecedents and Consequences of Team Empowerment, *Academy of Management Journal, 42*(1), 58-74.

Klein HJ, Brinsfield CT, Cooper JT and Molloy JC. (2017). Quondam commitments: An examination of commitments employees no longer have. *Acad Manag Discov. 3*, 331–357. https://doi.org/10.5465/amd.2015.0073

Kohli, A. (1985). Some Unexplored Supervisory Behaviors and Their Influence on Salespeople's Role Clarity, Specific Self Esteem, Job Satisfaction and Motivation, *Journal of Marketing Research, 22*, 424-433.

Korte, R. F. and Chermack, T. J. (2006). Changing organizational culture with scenario planning, *Futures*, 1-12.

Krauss, J. and Vanhove, A.J. (2022). Organizational culture perceptions and change frequency: the moderating effect of members' hierarchical level in the organization, *Leadership ve Organization Development Journal, 43*(2), 302-314. https://doi.org/10.1108/LODJ-10-2021-0464

Latif, H., Majoka, M. I. and Khan, M. I. (2017). Emotional Intelligence And Job Performance Of High School Female Teachers, *Pakistan Journal Of Psychological Research, 32*(2), 333-351.

Lee JY, Park S and Baker R. (2018). The moderating role of top management support on employees' attitudes in response to human resource development efforts. *J Manag Organ. 24*: 369–387. https://doi.org/10.1017/jmo.2017.37

Lok, Peter, Westwood, Robert and Crawford, John (2005). Perceptions of Organizational Subculture and Their Significance for Organizational Commitment, *Applied Psychology, 54*(4), 490-514.

Lovely, N.S., Afzal, K.M., Alam, Z. (2019). Impact of Job Satisfaction and Organizational Commitment on Job Performance of Private Bank Employees in Bangladesh. *The USV Annals of Economics and Public Administration, 19*(2-30), 112-123.

Lu, B.; Guo, X.; Luo, N. and Chen, G. (2015). Corporate Blogging And Job Performance: Effects Of Work-Related And Nonwork-Related Participation, *Journal Of Management Information Systems, 32*(4), 285-314.

Luthans, F. (1992). Organizational Behavior, *New York, Mc Graw Hill.*

Mahajan A, Bishop JW and Scott D. (2012). Does trust in top management mediate top management communication, employee involvement and organizational commitment relationships? *J Manag Issues. 24*, 173–190. Available: https://www.jstor.org/stable/43488132

Martin, A.J., Jones, E.S. and Callan, V.J. (2005). The role of psychological climate in facilitating employee adjustment during organizational change. *European Journal of Work and Organizational Psychology, 14*(3), 263-89.

Mcdermott, C. M. and Stock, G. N. (1999). Organizational culture and advanced manufacturing technology implementation. *Journal of Operations Management, 17*(5), 521–533.

Menges, I.J.; Tussing, V.D.; Wihler, A. and Grant, M.A (2017). When Job Performance Is All Relative: How Famıly Motivation Energizes Effort And Compensates For Intrinsic Motivation, *Academy of Management Journal, 60*(2), 695-719.

Miller, V.D., Johnson, J.R., and Grau, J. (1994). Antecedents to willingness to participate in a planned organizational change. *Journal of Applied Communication Research, 22*(1), 59–80.

Mujeeb, E.U., Masood, M.T. and Ahmad, M.S. (2011). Relationship Between Organizational Culture and Performance Management Practices: A Case of University in Pakistan, Journal of Competitiveness, *Aralık, 4*, 78-86.

Nielsen, K., and Randall, R. (2013). Opening the black box: Presenting a model for evaluating organizational-level interventions. *European Journal of Work and Organizational Psychology, 22*(5), 601–617. https://doi.org/10.1080/1359432X.2012.690556.

Ogbonna, E. and Harris, L. C. (2000). Leadership Style, Organizational Culture and Performance: Empirical Evidence From UK Companies, International, *Journal of Human Resource Management, 11*(4), 766–788.

Oudenhoven, J. P. (2001). Do Organizations Reflect National Cultures? A 10-Nation Study, *International Journal of Intercultural Relations, 25* (1), 89-107.

Prajogo, D. and McDermott, C.M. (2011). The Relationship Between Multidimensional Organizational Culture and Performance, *International Journal of Operations and Production Management, 37*(7), 712-735.

Quinn, R.E. (1988). Beyond Rational Management. *San Francisco: Jossey-Bass Inc Publishers.*

Quinn, R.E. and Spreitzer, G.M. (1991). The psychometrics of the competing values culture instrument and an analysis of the impact of organizational culture on quality of life. In Woodman R. & Pasmorewa, W. (Eds.) *research in organizational change and development, 5,* 115-157.

Reeves, C. and Bednar, D. (1994). Defining Quality: Alternatives and Implications, *Academy of Management Review, 19*(3), 419-445.

Rotundo, M. and Sackett, P.R. (2002). The relative importance of task, citizenship and counterproductive performance to global ratings of job performance: A policy-capturing approach. *Journal of Applied Psychology, 87*(1), 66-80.

Rousseau, D.M. and Mclean P. J. (1993). The Contracts of Individuals and Organizations. (ed.), Cummings, L. L. & Staw, B. M., *Research in Organizational Behavior, 15*, 1-43.

Schyns, B. (2004). The influence of occupational self-efficacy on the relationship of leadership behavior and preparedness for occupational change. *Journal of Career Development, 30*, 247-261.

Scott, Tim, Mannıon, Russel, Marshall, Martin and Davies, Huw (2003). Does Organizational Culture Influence Healthcare Performance? A Review of The Evidence, *Journal of Health Services Research and Policy, 8*(2), 105–117.

Sekaran, U. (1992). Research Methods for Business, Canada: *John Wiley and Sons, Inc.*

Setyaningrum, R.P., Setiawan, M., Surachman, S., and Irawanto, D.W. (2017). Employees Performance; Leadership, Organizational Commitment and Trust. *International Journal of Economic Perspectives, 11*(2), 281-288.

Shafique, I.; Kalyar, M.N. and Ahmad, B. (2018). The Nexus Of Ethical Leadership, Job Performance, And Turnover Intention: The Mediating Role Of Job Satisfaction, *Interdisciplinary Description Of Complex Systems 16*(1), 71-87.

Sigler, T.H. and Pearson, C.M. (2000). Creating An Empowering Culture: Examining The Relationship Between Organizational Culture and Perceptions of Empowerment, *Journal of Quality Management, 5*, 27-52.

Škerlavaj M., Song J.H. and Lee Y. (2010). Organizational learning culture, innovative culture and innovations in south Korean firms, *Expert Systems With Applications, 37*, 6390–6403.

Sonnentag, S. and Frese, M. (2002). Performance concepts and performance theory. *In S. Sonnentag (Ed.) Psychological Management of Individual Performance NewYork: John Wiley & Sons*, 4-25.

Syamsir, S. (2020). Competence, Job Satisfaction, Work Motivation, and Job Performance of The Village (Nagari) Masters in Managing E-Village Finance. *International Journal of Advanced Science and Technology, 29*(8), 1337-1350.

Sykes, T.A. and Venkatesh, V. (2017). Explaining Post-Implementation Employee System Use And Job Performance: Impacts Of The Content And Source Of Social Network Ties, *Mis Quarterly, 41*(3), 917-936.

Trice, H., and Morand, D. (1991). Organisational Subculture and Countercultures. *In G. Miller (Ed.), Studies in Organisational Sociology Greenwich, CT: JAI Press*, 45–69.

Tseng, Y.F. and Lee, T.Z. (2009). Comparing Appropriate Decision Support of Human Resource Practices on Organizational Performance with DEA/AHP Model, *Expert Systems with Applications, 36*, 6548–6558.

Wanberg, C.R., and Banas, J.T. (2000). Predictors and outcomes of openness to changes in a reorganizing workplace. *Journal of Applied Psychology, 85*(1), 132–142.

Wang, D.S., and Shyu, C.L. (2003). The impact of organizational culture and knowledge sharing motivation on knowledge sharing. *Sun Yat-Sen Management Review, 11*(3), 409–431.

Williams, L.J., and Anderson, S.E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*(3), 601–617.

Wu, C.-H.; Chen, I.-S. and Chen, J.-C. (2017). A Study Into The Impact Of Employee Wellness And Job Satisfaction On Job Performance, *International Journal Of Organizational Innovation, 10*(2), 252-269.