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The effect of change leadership on employees' readiness to change: the mediating role of organizational culture

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Abstract

The purpose of this study was to look into the impact of change leadership on employee readiness to change in a few public organizations in Ethiopia's Amhara national regional state. The study's population consists of 2546 employees from eight public organizations that had begun implementing various change initiatives. Quantitative survey method was applied to conduct this study. A total of 514 employees were chosen for the survey using a simple random sampling technique. The measurement instruments' reliability and validity were tested using exploratory and confirmatory factor analysis methods. The data were analyzed, and the hypotheses were tested using structural equation modeling method. Change leadership and organizational culture, as well as organizational culture and employee readiness to change, were found to have a significant relationship. However, change leadership has no direct effect on employees' readiness to change, and organizational culture does not affect the relationship between change leadership and employee readiness to change. The study will add knowledge and provide a base for future research.

Keywords: Change leadership, Readiness to change, Organizational culture, Public organizations

Introduction

There is a pressing need for public organizations to implement organizational change in today's world [56]. However, implementing organizational change in public organizations is a huge challenge [33, 37]. For organizational change to take place, both individuals and organizations must be willing to change [3]. Several studies have shown that a large percentage of change initiatives fail [13, 36]. There have been numerous reasons cited for such failures in change implementation. The most common reason was discovered to be a lack of employee readiness to change. The theories and approaches of change management do not provide a clear framework on how to manage change successfully. Previous studies disclosed the inherent contradictions and lack of empirical evidences about organizational change management [14]. The main question here is where to begin and how leaders can prepare their employees for change. These questions have prompted researchers to seek out appropriate solutions for successful change.

According to research, the readiness of employees to change is a key factor in change's success [19, 39]. However, in many previous studies, this critical factor was frequently overlooked [56]. Many researchers have focused on individual behaviors that contributed to the failure or success of change implementations. Taking this into account, numerous studies have emphasized the importance of increasing employee readiness for a specific change initiative [3]. During organizational change, the importance of change leadership has been emphasized [19]. Previous research has looked into and demonstrated how transformational leadership can help employees support a specific organizational change. They did, however, overlook leadership behaviors that have been discussed in the literature

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on change management [19, 56]. Researchers suggest that the majority of studies arguing for the importance of change leadership in government organizations are qualitative case studies [55]. As a result, little empirical evidence exists about how and to what extent change leadership contributes to the change process [19, 22].

Government in developing countries shoulder a major responsibility for maintaining the stability and the promotion of rapid economic and social development. One possible way of achieving this is by delivering effective and efficient public service to citizens. Change management is not only essential component of public sector transformation, but also a crucial factor to the success of efficient public service delivery. In the context of public sector institutions, change management should focus on how to bring a transition from old public administration approach to modern adaptive processes. Ethiopian government organizations have been implementing a variety of change initiatives. Most of these change initiatives have been part of public management reform programs aimed at making public organizations better in terms of service deliver through process and structural changes. These change initiatives were aimed at improving the performance and service delivery in a more efficient and transparent manner. These include change packages from the federal government through sponsorship (sometimes by imposition) by international donor agencies and foreign governments. When we see the civil service reforms programs implemented for the last two decades in the country, it can be concluded that most of them (if not all) did not achieve their desired results and failed. However, because the majority of them claimed to have failed, the success rate for change is lower than expected. Ethiopian public institutions can be characterized by lack leadership commitment, slow official decision and action, staffed by old aged people, common practice of nepotism, and unresponsive to the public.

This study was made on the fact that public organizations in Ethiopia faced with problems in terms of effectively implementing change initiatives. The problem of change leadership in Ethiopian public organizations can be supported by the prevalent nationwide challenge in change implementation. This challenge is due to change fatigue [50–52]. Change initiatives were short-lived, and new change initiatives introduced before the evaluating the outcomes of the previous one. These reduced the civil service willingness to accept new change initiatives. The main problems associated with the problem include resistance, ignorance of context during implementation and lack of leadership capacity. This indicates that the change management practice in Ethiopian public sector organizations needs to be examined. This piqued the researchers' interest in why change initiatives fail and what factors can improve employees' readiness for change.

The above-mentioned realities necessitate identifying the most effective factors that will assist change leaders in scientifically understanding change processes. They may be able to solve problems of change resistance as well as improve their readiness to change by doing so [28]. The purpose of this study was to look into the role of organizational culture in mediating the relationship between change leadership and follower change readiness. As a result, the following two research questions are addressed in this study: (a) How does change leadership affect employee readiness to a specific change in government organizations? And (b) How does organizational culture influence the relationship between change leadership and employee change readiness? Based on this, the objective of this research is to investigate the effect of change leadership behavior on employees' readiness to change and how the relationship between change leadership and employees readiness is mediated by organizational culture.

The researchers believe that this research will be useful and have both practical and theoretical implications. First, this research contributed to the literature on change management. In future studies, the research model will be validated and replicated. The model could be useful in the future. Second, the findings of this study will encourage change leaders in Ethiopian government organizations to prioritize change readiness as a key factor. Finally, the study assists change leaders in obtaining and utilizing study data, which may be used to assess, design, and evaluate new and existing change initiatives.

Theoretical and conceptual framework

Change leadership and employees' readiness to change

Leadership often cited as an important element in terms of creating conducive environment for effective change implementation. Literature on organizational change management indicates that boosting employees' readiness for change depends on specific attributes of the leader and how the leader promotes the change leader [2, 42]. There are different styles of leadership, and most studies mention transformational and change leadership's effect on employees' readiness for change, but there is some level of difficulty of differentiating between them. Some writers and researchers tend to use them interchangeably, asserting that they share common elements [19]. One criterion to differentiate between the two is time orientation. Transformational leadership argued to emphasize on long-term effects on followers, while

change leadership focuses on short-term and specific change project [19, 39]. Most change leadership dimensions such as communicating the plan for change, building a guiding coalition, developing a sense of urgency or a compelling rational for the change and providing support can be linked to one or more dimensions of transformational leadership [19, 39, 56]. On the other hand, transformational leadership is related to strategic leadership, while change leadership is more attached to tactical leadership behavior [19].

Change leadership is defined as the behavior of direct supervisors, which aimed at framing and shaping organizational change, and creating capacity among change recipients to implement change [1]. Change leadership involves enhancing favorable attitude among change recipients concerning change [56]. Change leadership behaviors include ensuring the need for change, providing vision and plan, building support and commitment, and monitoring the implementation [2]. Leaders by exhibiting change leadership behaviors such as high-quality change information and employee participation, communication about change and providing individual employees the opportunity to contribute in the change process [19]. Specific attributes of a leader and the way how he or she promotes the change is one critical factor to increase individual employee's readiness to change. The attribute and change-promoting behavior embraces the concept of change leadership. Change leadership can be conceptualized as the behavior of direct supervisors, and it is aimed at framing and shaping organizational change along with boosting the capacity of employees to implement the change initiative [1]. It involves crating favorable attitudes among change recipients regarding the change [56]. It includes ensuring the need for change, providing vision and plan, building support and commitment to the change, and monitoring its implementation [2]. Change leaders should also show behaviors such as high-quality change information and employee participation, communication about the change and providing individual employee the opportunity to contribute in the change process [19].

Many failure stories of change implementation reported along with various factors as a reason [13]. Among these, individual employees' lack of readiness to change is one of the commonly mentioned reasons for change ineffective implementations [29]. Change leaders can influence their employees' readiness to a given change, and they can use numerous factors. Among others, participation in decision making [29, 44, 56], communication and information [21, 44], organizational support [21, 29], organizational culture [8, 21, 38, 44] are the factors that change leaders could use to enhance their employees' readiness to change.

Empirical studies have also indicated the positive and significant effect of leadership in employees' readiness to change [49]. Change leader's attribute found to be crucial in the process of creating employees' readiness to change. Bakari et al. [28] suggest that successful implementation of change requires its leader to boost employees' readiness and provide behavioral support for change. Employees' participation in the change management process found to create a feeling of empowerment, control and motivation [44, 56]. Diab et al. [23] reported a positive correlation between employees' readiness to change and leader's behavior. In addition to this, psychological empowerment by the change leader [43] and support by the change leader [16, 29] found to significantly predict employees' readiness to change. Thus, the following is hypothesized:

H_1: Change leadership is positively related to individual employee's readiness to change.

Change leadership and organizational culture

The emergence of organizational culture as a pivotal variable in determining the successful effort to implement institutional change has been mentioned by authors. They argued that organizational culture determines employees' readiness to a given change initiative [38]. Change initiatives that are aligned with the organizational culture may be embraced with enthusiasm and implemented quickly [17]. Organizational culture can be defined in many ways perhaps the central essence of these different definitions circulates around relatively similar concepts. Organizational culture can be defined as "a pattern of shared basic assumptions [47], as "beliefs and behavioral norms [53], and as "a belief, attitudes, and intentions of employees [8]. The core values of an organization begin with its leadership [53]. Leaders have to play their role in shaping and maintaining an organization's culture [38]. They have to ensure consistent behavior between members of the organization [53]. They should also be explicit about the type of culture and underlying behaviors that will best support the new ways of doing things, and find opportunities to socialize, model, and reward those behaviors [38]. Normative perspective defines organizational culture as a shared beliefs and expectations. Organizational culture in this study is viewed from this normative perspective and conceptualized including six sub-dimensions. These dimensions are

teamwork and conflict, climate and moral, information flow, involvement, supervision and meeting.

Leadership styles are theoretically and empirically related to organizational culture. Leaders mold organizational culture; they do this through role modeling, teaching and coaching [48]. They can also shape sound organizational culture through articulating vision, direction, valuing and nurturing organizational members [20]. Leaders who can align and communicate core values and provide support can shape organizational culture. A strong positive relationship between leadership styles and organizational culture is suggested [5]. Leadership can shape the culture of an organization [40]. Framing a vision for change that catalyzes cultural elements of the organization creates a powerful means of stimulating support for change among employees [38]. Charismatic personality of a change leader largely influences followers to support the change as well as change their values, beliefs and working attitudes, which help employees understand and accept the organizational change [2]. Organizational culture that matches to employees' change readiness should be evaluated by the change leader and change-related dimensions should be identified [8, 38]. This will lead to change leadership efforts targets only the areas where employees' change readiness is need to be improved [8]. Based on this, the following is hypothesized:

H_2: Change leadership is positively related to organizational culture.

Organizational culture and employees' readiness to change

The relationship between organizational culture and employees' readiness to change, as well as how the former influences the latter, has been investigated and reported by numerous researchers [8, 27, 44]. There are cases where the characteristics of organizational culture led to failures of change programs. Enhancing employees' readiness to change requires assessment of organizational culture. Such an assessment should target the areas where improvement in change readiness is needed [8, 38]. Understanding organizational culture enables leaders to leverage existing values and behavioral norms in designing change interventions. Thus, it is essential to identify those aspects of organizational culture targeted for modifications as well as those dimensions intended to be preserved or strengthened [38]. As a multidimensional concept, change readiness entails values, beliefs, attitudes, thoughts, emotions and intentions.

Values, beliefs, behaviors and other cultural elements are related to change readiness. Organizational culture boosts employees' readiness to change through motivation, alignment, flexibility and trust. They are organizational culture dimensions impacting change readiness [32]. Organizational culture can impact employees' readiness to change through intrinsic motivation. Intrinsic motivation is referred to the desire of employees to comply with organizational norms and values. Organizational identification positively affects change readiness if the values of employees match with the values levied by the change initiative. Change that is based in the existing culture value is more likely to be accepted by employees [21]. Flexibility as an organization value directly leads to employees' readiness to a given change initiative. Organizations with flexible structures and flexibility-oriented values are more ready to change [31]. Another dimension of organizational culture that has an impact on employees' change readiness is trust. It refers to the willingness to cooperate to achieve goals [54]. Relationships that are based on trust lead to employees' readiness to change [34].

Empirical studies made have confirmed the direct relationship between organizational culture and employees' readiness to change. These findings further suggest organizational culture as a crucial to successful organizational change implementation; through boosting employees' readiness to change. Gelaidan and Ahmed [27] indicated the positive influence of organizational culture on employees' readiness to change. They suggested that public organizations which are interested to implement change initiatives to be concerned with organizational culture. Adil [2] reported the positive relationship between organizational culture and employees' readiness to change. Positive organizational culture found to trigger employees' motivation and commitment to participate in the change implementation [44]. The role of culture of effectiveness in terms of increasing employees' readiness to a change initiative is also found [40].

Based on the above theoretical and empirical assertions, the following hypothesis is posited:

H_3: Organizational culture is positively related to employees' readiness to change.

Mediation of organizational culture

Change leaders are responsible to shape and maintain appropriate organizational culture, which is conducive to foster employees' willingness to accept and implement change initiative. They are required to shape the

behaviors and attitudes of their employees. By doing this, they create a favorable climate toward change [4]. According to Kin et al. [35], change leadership refers to leadership which possesses the necessary abilities and attributes that are crucial to shape appropriate organizational culture that enable them enhance their employees' readiness to change [35]. This implies that leaders may positively influence employees' readiness to change through organizational culture [40]

Leadership can be beneficial by creating cultural aspects which is favorable to organizational change. Literature suggests that leaders' behavior greatly influences all aspects of organizational culture and indicates the expected influence of culture on employees' readiness for change [27]. The role of organizational culture between leadership and employees' readiness for change is reported. Organizational culture and change management have a positive return, and also organizational culture mediates the relationship between leader–member exchange and organizational change management [41]. Organizational culture has previously been reported as a mediating factor between leadership style and affective commitment to change [27]. The impact of ethical leadership on employees' readiness for change and the partial mediation role of organizational culture between the two is reported [40]. The mediating role of organizational culture between change leadership and employees' readiness to change is also found [2]. Therefore, this study intends to investigate the mediating role of organizational culture in the relationship between change leadership and employees' readiness to change by postulating the fourth hypothesis:

H_4: Organizational culture will positively mediate the relationship between change leadership and employees' readiness to change.

Methods

From the total of 2560 employees of the seven organizations, representative sample size was included in the study. Based on Morgan table, the sample size was estimated to be 334. Selecting a larger sample size to compensate for the likelihood of response rate lower than 100% is recommended by authors [11]. The researcher believes that the issues to be raised in this research are very sensitive and respondents may hesitate to give response to them. Taking into account the research culture of the country, the researcher adjusted the sample size assuming the response rate of 65%. The adjusted sample size is 513.

Krejcie and Morgan [46] formula

$$S = \chi^2 N P (1 - P)/d^2(N - 1) + \chi^2 P (1 - P)$$

where s = the required sample size, χ^2 = the table value of Chi-square for one degree of freedom at the desired level of confidence level = 95% = 3.841 = (1.96*1.96), N = population size, P = the population proportion (assumed to be 0.5). Krejcie and Morgan recommended 0.5 as an estimate of population proportion as this proportion will result in the maximization of variance and produce maximum sample size [46], d = the degree of accuracy expressed as a proportion (0.05)-error the researcher wants to accept.

Using the above formula

$$S = 3.842 * 2560 * 0.5 * 0.5/\ 0.5^2(2560 - 1) + 3.841 * 0.5(0.5)$$
$$S = 334$$

So the adjusted sample size is 334/0.65 = 514.

Seven items from the Herold et al.'s [19] instrument were used to measure the independent variable change leadership. The organizational culture (mediating variable) instrument was adapted from Glaser et al. [24], which has 13 items for the six sub-constructs of teamwork and conflict (2 items), climate and morale (3 items), information sharing (2 items), involvement (2 items), meetings (2 items), and supervision (2 items) (2 items). Employees' readiness for change was measured using nine items from an instrument developed by Dave et al. [18] (three items for each of the three subconstructs: intentional, emotional, and cognitive readiness). The three instruments' items are all rated on a Likert scale of 1–5, with 1 indicating strong disagreement and 5 indicating strong agreement.

A total of 340 instruments were collected out of 514, with a good response rate of around 65%. Thirteen cases were removed from the data set because they had more than 10% missing values. In addition, the data were screened for respondents who were uninterested in participating. In this case, 11 people were excluded because they answered yes or no to the majority of the questions. There were no outliers, and missing values were identified and imputed using the marching response method [45]. In terms of skewness, the indicators and all other variables have a fairly normal distribution. Statistical Package for Social Sciences (SPSS) version 22 and structural equation modeling method of analysis using Analysis of Moment Structure (AMOS) version 23 were used to analyze the data Using

Table 1 Demographic profiles of respondents

Variable	*N*	Percentage
Age	316	100
Below 25	51	16.1
Between 25 and 44	211	66.8
Between 45 and 55	53	16.8
Above 55	1	0.3
Gender	316	100
Male	244	70.9
Female	92	29.1
Education status	326	100
Certificate	2	0.6
Diploma	30	9.5
First degree	193	61.1
Second degree	87	27.5
Third degree	4	1.3
Work experience	316	100
< 1 year	18	5.7
Between 2 and 5 years	114	36.1
Between 6 and 10 years	96	30.4
> 10 years	88	27.8

Structural Equation Modeling has some advantages. One advantage is that latent variables are more reliable measures than observed variables because measurement errors are estimated and removed. Another advantage is that it easily allows the researcher to examine models with multiple dependent variables [15]. It permits the estimation of the goodness of fit of an entire model. AMOS is the appropriate software for the analysis of structural equation modeling. It also has a user-friendly graphical interface and the potential to enhance conceptual understanding and communication of results [15, 45].

Study result

The demographic profiles of the respondents were described before the hypotheses were tested. Table 1 shows the demographic characteristics of respondents, including their age, gender, educational status, and work experience. The majority of the workers (66.8%) are between the ages of 25 and 44. In addition, 16.8% of respondents are between the ages of 45 and 55, 16.1% are under the age of 25, and only one (0.3%) is over the age of 55. Male respondents make up 70.9% of the total, while female respondents make up 29.1%. When it comes to educational attainment, 61.1% have a bachelor's degree and 27.5% have a master's degree. Diploma, third-degree, and certificate holders make up small percentages of the respondents, accounting for 9.5%, 1.3%, and 0.6%, respectively.

The majority of respondents (36.1%) have between 2 and 5 years of work experience, while 30.4% have between 6 and 10 years of work experience. Only 5.7% of respondents have less than one year of experience, with 27.8% having more than ten years of experience. Employees' perceptions of change leadership that are rated as most important to them and their readiness for the change were determined using descriptive statistics. The descriptive table represents scores from subscales of the 316 sample when reporting the results. It is calculated descriptive statistics on employee responses to change leadership, organizational culture, and employee readiness for change. The mean, standard deviations, skewness, kurtosis, and zero-order Pearson correlations are shown in Table 2. A check for multi-collinearity between variables was also performed. If Pearson R-values exceed 0.90, a multi-collinearity problem will be assumed [26].

Factor analysis exploratory

The researchers used principal component factoring to condense a total of 29 Likert scale items into the three required variables. Due to their low-reliability scores, eleven items (four from organizational culture, two from change leadership, and five from readiness to change) were reduced. In the confirmatory analysis, the remaining 18 items were used. For change leadership, organizational culture, and employees' readiness for change, the Kaiser–Meyer–Olkin sampling adequacy value was 0.0.876, 0.790, and 0.876, respectively, which is higher than 0.70 (Table 3). This indicates that each variable can be predicted with a sufficient number of items. When we look at the KMO and Bartlett's test results, we can see that the data from the questionnaire are suitable for confirmatory factor analysis.

Table 2 Mean, standard deviation, skewness, kurtosis, and correlations

	Mean	SD	Skewness	Kurtosis	CL	OC	ERC
CL	3.50	1.13	−.195	−.619	1.000		
OC	2.79	.680	−.183	−.325	.372	1.000	
ECR	3.18	.876	−.243	−.454	.284	.391	1.000

CL change leadership, *ERC* employees' readiness to change, *OC* organizational culture

Table 3 Summary of exploratory factor analysis results to examine the validity of questionnaire

	Change leadership	Organizational culture	Employees' readiness for change
KMO	0.876	0.790	0.876
Bartlett's test chi-square	1049.777	684.285	1611
Df	15	28	28
Significance	.000	.000	.000

Table 4 Factor loadings, composite reliability and average variance explained

Variable	Item	Sd coeff	CR and AVE	Source
Change leadership	Change leadership3—My leader made a case for urgency of this change prior to implementation	0.62	CR = 0.854 AVE = 0.57	Herold et al. [19]
	Change leadership4—My leader built a broad coalition up front to support the change	0.75		
	Change leadership5—My leader empowered people to implement the change	0.79		
	Change leadership6—y leader carefully monitored and communicated progress of the change implantation	0.84		
	Change leadership7—My leader gave individual attention to those who had trouble with the change implementation	0.75		
Organizational culture	Team work and conflict 2—People I work with accept criticisms without becoming defensive	0.57	CR = 0.887 AVE = 0.47	Adil [2]
	Climate and moral1—This organization respects its workers	0.76		
	Climate and moral2—This organization motivates people to be efficient and productive	0.70		
	Climate and moral3—There is an atmosphere of trust in this organization	0.63		
	Information flow2—I get enough information to understand the big picture here	0.72		
	Supervision1—My supervisor delegates responsibilities	0.69		
	Supervision2—My supervisor gives me criticism in a constructive manner	0.70		
	Meeting1—Time in meetings is time well spent	0.74		
	Meeting2—Our discussions in meetings stay on track	0.66		
Employees' readiness for change	Employees' readiness to change5—Plans for future improvement will not come too much	0.67	CR = 0.835 AVE = 0.56	Dave et al. [18]
	Employees' readiness to change5 6—I have good feeling about the change project	0.80		
	Employees' readiness to change7—I experience the change as a positive process	0.81		
	Employees' readiness to change9—I found the change refreshing	0.72		

CL change leadership, *OC* organizational culture, *ERC* employees' readiness for change, *SWR* standardized regression weight, *SMC* squared multiple correlation, *CR* critical ratio

***$p < 0.001$

Confirmatory factor analysis (measurement model)

A confirmatory factor analysis was conducted, which included 18 items and explained three major latent variables. Table 4 shows the results of construct and convergent validity for each of the three latent constructs, including Cronbach alpha (EFA), composite reliability (hereafter CR) of the scales, and average variance explained (hereafter AVE) (Table 4). To test the measurement model, major goodness-of-fit (GoF) measures were used [10, 12, 15, 45]. Chi-square statistics to the degree of freedom (CMIN/DF), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), normed fit index (NFI), Tucker–Lewis index (TLI), also known as the non-normed fit index (NNFI), comparative fit index (CFI),

Table 5 Model fit indices

	CMIN/DF	p-value	GFI	AGFI	NFI	TLI	CFI	RMSEA
Recommended	< 5[a]	Insignificant	≥ 0.85[a]	≥ 0.80[b]	> 0.90[c]	> 0.95[d]	> 0.90[c]	0.05–0.08[e]
CFA(measurement)	2.269	000	0.905	0.874	0.900	0.930	.0.940	0.063 (0.012)

[a] Byrne [15], [b]Hair et al. [26], [c]Bagozzi and Yi [10], [d]Bentler [12], [e]Lomax and Schumacker [45]

Table 6 Model comparison

Structural model	χ^2	*Df*	$\Delta\chi^2$	GFI	AGFI	NFI	TLI	CFI	RMSEA
Hypothesized model—Full	333.83	128	–	0.892	0.856	0.894	0.910	0.924	0.71 (000)
Alternative model1: Mediation only	333.98	129	0.15	0.892	0.857	0.894	0.911	0.925	0.0071 (000)
Alternative model2: Direct effect only	379.60	130	63.6	0.882	0.845	0.893	0.892	0.908	0.078 (000)

All models are compared to the hypothesized model

***$p < 0.001$

and root-mean-square error of approximation are some of the most commonly used measures (RMSEA).

The model fit the data well, with GFI = 0.905, AGFI = 0.876, NFT = 0.900, and CFI = 0.942, and the hypothesized model adequately described the sample data. The TLI value in this study is 0.930, indicating that there is a good fit (Table 5). The hypothesized model's RMSEA is 0.063, with a 90% confidence interval of 0.047 to 0.059 and a p-value of 0.176 for the test of the closeness of fit. This means that we can be 90% confident that the true RMSEA value in the population will be between 0.053 and 0.072 (Table 5). This represents a high level of precision, and it can be concluded that the model that was initially proposed fits the data well.

The overall results of the structural model analysis using SEM are shown in Table 6. The structural model is well-fitting. The Chi-square index (CMIN/DF) 2.589 with a p-value of 0.000, as well as other fit indices (GFI = 0.892; AGFI = 0.856; NFI = 0.894; TLI = 910; CFI = 0.924; RMSEA (CLOSE) = 0.071(000), can be used to determine this (Table 6). All of these model fit indices are above the recommended level, indicating that the structural model has an acceptable goodness-of-fit (GoF) to the sample [10, 12, 15, 26, 45].

The researcher compared the hypothesized model to two alternative models to see if it was robust. First, alternative model 1 specified a mediation-only model that differed from the original model only in that the direct link between change leadership and employees' readiness for change was set to zero.

The model has a lower good fit (2 = 0.145) than the others. The descriptive fit indices were nearly identical (AGFI = 0.001TLI = 0.001, CFI = 0.001), with the CFI being marginally better. The second model was

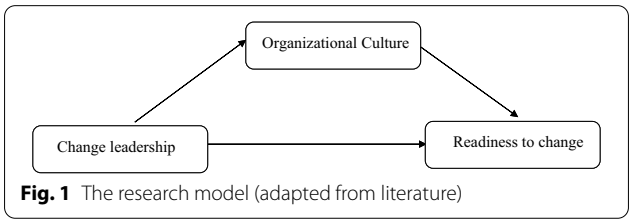

Fig. 1 The research model (adapted from literature)

the direct effect only model (alternative model 2). Only the direct effect of change leadership on employees' change readiness was allowed in this study, while the other two relationships were set to zero. The model was found to be less accurate than both the original and alternative models (1(2 = 63.617 *df* = 1). The descriptive fit indices GFI = 0.010, AGFI = 0.012, NFI = 0.001, TLI = 0.019, CFI = 0.017, and RMSEA (RMSEA = 0.007) all decreased. As a result, when compared to the alternative model, the original model produced a better fit. Furthermore, the original model is less resource-intensive than the two alternatives.

The variables' structural relationships

The structural part of the specified model was examined in addition to testing the appropriateness of the measurement model. Figure 1 shows the outcome of the analysis. Standardized coefficients and significant numbers were used to confirm or reject the research hypotheses (Table 7). The full hypothesized model shows sufficient model fit (GFI = 892; AGFI = 856; TLI = 910; CFI = 924, and RMSEA (PCLOSE) = 0.071) (2 = 333.835 df = 129 GFI = 892; AGFI = 856; TLI = 910; CFI = 924, and RMSEA(PCLOSE) = 0.071) (000).b The direct and indirect effects were accounted for in the structural model. The model shows a negative and insignificant direct

Table 7 Hypothesis testing

Hypothesis	Regression path	SRW	SMC	SE	CR	Sig	Remark
H_1	CL → ERC	− 0.033	0.020	0.084	− 0.039	0.696	Not supported
H_2	CL → OC	0.421	0.177	0.068	5.579	***	Supported
H_3	OC → ERC	0.152	0.023	0.095	2.052	0.04	Supported

path from change leadership to employee readiness for change, which contradicts H1. Organizational culture is significantly and positively linked to change leadership (=0.42; *p* 0.01). As a result, H2 is accepted (see also Fig. 2).

Organizational culture, according to H3, should be positively related to employees' willingness to change. This hypothesis is supported by the data (=0.15; *p* 0.04). A direct link between a predictor and an outcome variable is not required to postulate a mediation effect, according to one argument. As a result, we put the proposed organizational culture mediation of change leadership and employee readiness to change to the test (H4). The data show that change leadership has no indirect effect on employees' readiness for change through organizational culture (=0.063). To claim that there is mediation, the coefficient for the indirect effect must be significantly lower than the direct effect. However, the indirect effect (=0.063) has a higher coefficient than the direct effect (= − 0.03). As a result, H4 is not supported (Table 8).

Table 8 Mediation effect

H_4	Direct without mediation	Directβ mediation	Indirect β	Mediation type
CL → OC → ERC	0.42***	0.15**	0.063	No mediation

($p < 0.05$); *($p < 0.001$)

Discussion

The study investigates whether organizational culture mediates the relationship between change leadership and employee readiness to change. Change leadership has a negative and insignificant direct impact on employees' readiness for change, according to the findings of the study. This finding is consistent with Herold et al. [19] and Mangudjaya's [39] findings that "change leadership has no significant impact on employees' readiness (commitment) to change." There is also a lack of a direct relationship between change leadership and change recipients' commitment to change [56]. He confirmed that the link between change leadership and employees' willingness to change should be viewed as an indirect one. Other leadership styles may have a stronger relationship with followers' willingness to change as a result of this. The findings of Herold et al. [19], which found that transformational leadership was more strongly related to employees' change commitment than change leadership, could support this argument.

Change leaders and change agents can boost their followers' motivation to adapt to the desired change initiative by communicating clearly and consistently. Employee empowerment and participation in change-related problem-solving will also increase their belief that change is possible. Giving followers the authority to use resources to solve problems related to the change initiative can increase followers' intrinsic motivation to participate in the change. Change leadership and organizational cultural change have a strong relationship. Change leadership has a positive and significant relationship with organizational culture, according to this study (regression weight = 0.42, $p = 0.01$). This study's finding is consistent with Adil's [2] research. With (regression weight = 1.5, *p* 0.04), the results show that organizational culture has a direct positive and significant effect on employees' readiness for change.

The findings on the impact of organizational culture on employees' willingness to change are in line with the previous research. It has been reported that organizational culture has a positive impact on employees' willingness to change [27]. If a link between organizational change and employee readiness to change can be found, it is a win–win situation [2]. It is also discovered that organizational culture plays a role in enhancing employees' readiness to take on change initiatives. The role of organizational culture in increasing employees' readiness to change initiatives [44], and more specifically the role of organizational culture in boosting employees' motivation and commitment to participate in change implementation [40, 44]

One important area of investigation was the role of culture as a mediator in the relationship between change leadership and employee readiness for change. The role of organizational culture as a mediator has been well documented in the literature [38]. The indirect beta value must be significantly reduced for mediation to occur. The direct effect of change leadership on employees'

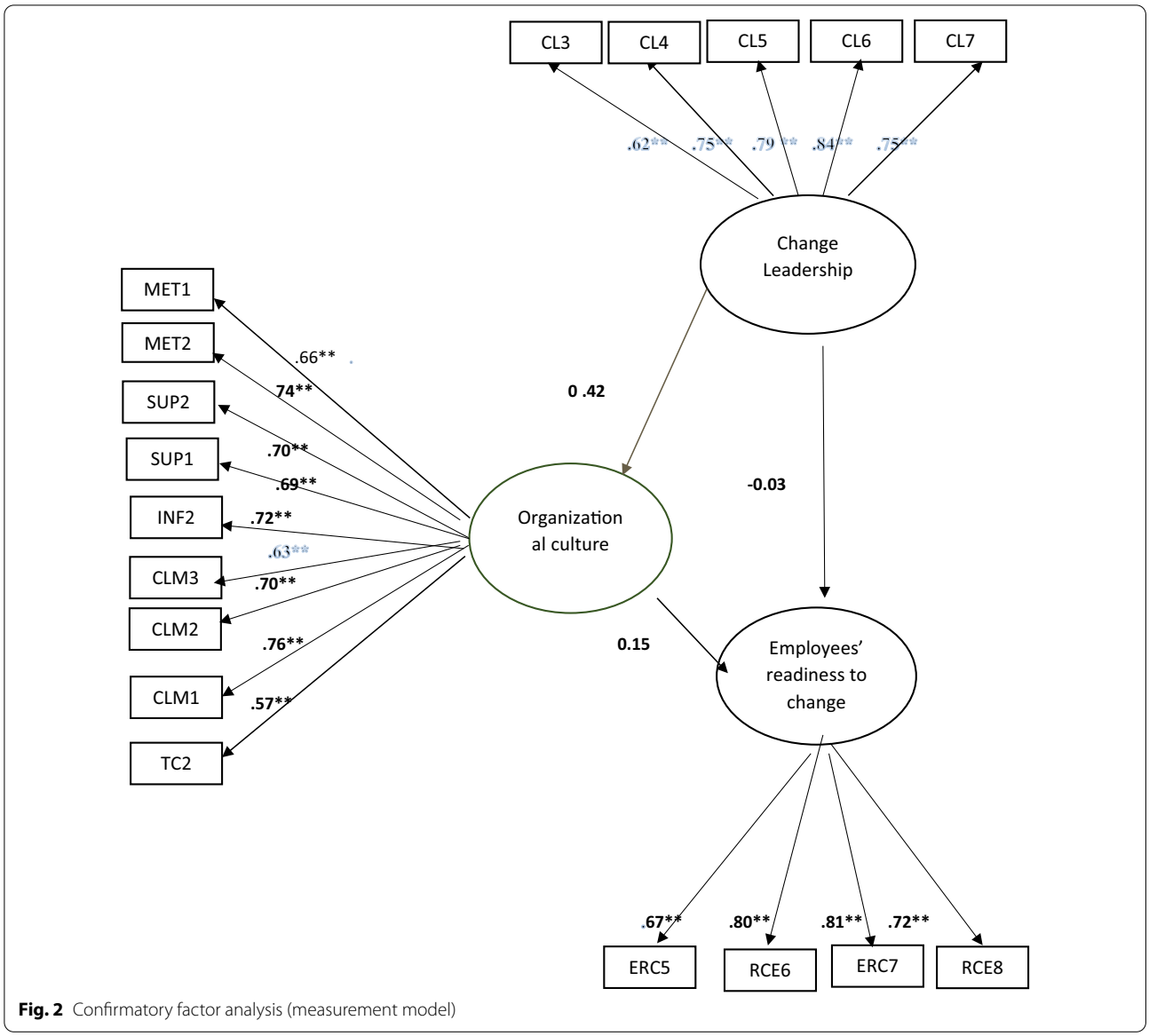

Fig. 2 Confirmatory factor analysis (measurement model)

willingness to change is negative in this study (− 0.03). The indirect beta coefficient is 0.063, indicating the possibility of mediation, i.e., the path passing through organizational culture (0.42*0.15). When organizational culture was added as a mediator, the indirect coefficient increased in comparison with the direct coefficient.

The findings revealed that organizational culture has no bearing on the relationship between change leadership and employee readiness to change. The findings of this study differ from those of previous studies in that organizational culture does not mediate the relationship between change leadership and employee readiness to change. Previous research has found that organizational culture mediates the relationship between leader–member exchange and organizational change management [41], as well as the relationship between leadership style and employees' affective commitment to change [27, 41], as well as the relationship between ethical leadership and employees' willingness to change [40]. The result also contradicts the findings of Adil's [2] research. His research discovered that organizational culture plays a role in mediating the relationship between change leadership and employee readiness to change. The findings of this study suggest that the role of organizational culture in mediating the relationship between other leadership styles and employees' willingness to change should be investigated further. Previous research has found that organizational culture plays a moderating role between leadership and employees' willingness to change, and it has also been suggested that organizational culture plays

a moderating role between leadership and other outcome variables [27, 41]. Leaders of a change process need to understand how to create and manage organizational culture that promotes openness to change. This requires them to have focus on ongoing basis. The role modeling behavior of change leaders must be practiced in public sector organizations.

During change times, employees may feel that they are vulnerable, and they require their leaders to provide the necessary psychological and resource support. This indicates change leaders create and maintain organizational culture with the crossover model of conservation theory. The model outlines how experiences, emotions, and resources are transferred within the social and organizational context [30]. The crossover of resources from the leader to the followers must exist. The leader–member exchange theory focuses on a two-way social exchange relationship between superiors and subordinates. Change leaders should provide vital resources like social support, control, and self-efficacy to followers. The existence of a positive and high-quality social exchange between change leaders and employees is a crucial factor. Change leaders' high engagement is found to have a better relationship with the followers, and this, in turn, benefits the followers' work engagement (Guterman et al. 2012). Leader–member exchange may play an important role in employees' engagement. The mechanisms of resource exchange at the individual or organizational level may be fundamental to creating and maintaining engaged and resilient employees and organizations during change time [25, 30]. To summarize, having good change leader and member exchange will create positive organizational culture, and through this change leader may boost the employees' readiness to accept the change initiative and engage them to effectively implement it.

Conclusion

The main purpose of this study was to investigate the mediating impact of organizational culture on the relationship between the change leadership behavior of change leaders of selected public organizations in Ethiopia and their employees' readiness to a specific change initiative. In addition to that, the direct impact of change leadership on employees' readiness to change as well as the impact of organizational culture was examined. The study revealed a mixed result. Two of the hypotheses were found to be accepted, while the remaining two were not accepted. On the one hand, the impact of change leadership on organizational culture as well as the impact of organizational culture on employees' willingness to change was discovered. On the other hand, neither the direct relationship between change leadership and employee readiness to change nor the mediating role of organizational culture in the relationship between change leadership and employee readiness to change is supported. The study concludes that change leadership does not have a direct impact on employees' readiness to change and organizational culture does not mediate the relationship between change leadership and employees' readiness for change. This may indicate that future research should test the moderating role of organizational culture and possible mediation of other variables.

Limitations and suggestions for future studies

The study will have its own set of limitations, which future researchers can address. This study is one of the few studies conducted in the context of Ethiopian public organizations and centered on the role of change leadership in determining employee readiness for change, with organizational culture serving as a mediator. Thus, future studies should include many more variables to get a more comprehensive result. It is necessary to conduct a comparative analysis of the effects of different leadership styles on employees' readiness for change in private organizations. This study was conducted using cross-sectional data. Longitudinal studies to know the level of commitment (the behavioral component) employees require for successfully implementing a change initiative should be considered. Carefully designed studies that seek to investigate changes over time can aid in understanding the phenomenon and devising possible intervention mechanisms to improve employees' change readiness levels. Fourth, future research on the antecedents of change readiness and the potential moderating effects of organizational culture and other variables should be studied and reported. Fifth, the research focused on seven public organizations with 513 employees in one Ethiopian regional state. Taking a large sample size from private and public organizations would help to increase generalizability. Finally, the finding is from employees' perceptions and self-reports, and to get a more comprehensive understanding of the variables, probing deeply into respondents' opinions and feelings may be beneficial.

Managerial and policy implications

Organizations that make a conscious decision to change their operations must also identify change agents responsible for leading and implementing the change effort. Organizations should formally identify change agents, which is beneficial in two ways. Firstly, it assigns responsibility in that certain organizational members are now accountable for the change implementation process. Secondly, change agents become a guiding force to support other organization members who may struggle with or question the change. The level to which change agents

are personally involved with the change implementation is also crucial. They should have day-to-day (not a mere collection of reports at some point in time) involvement. It minimizes resistance because other organizational members sense that someone in a formally designated leadership role is present and supportive. The change also requires the engagement of the appropriate personnel.

The findings suggest that change leaders in public organizations in Ethiopia can use their change leadership behaviors and characters to enhance their employees 'readiness to change. Public organizations in Ethiopia must realize the contribution of change leadership's role in boosting their employees' willingness to change and look at intervention mechanisms in leadership development. They must design appropriate leadership training and development programs. They can get the required change leaders equipped with the essential ability and competence. IT is a crucial factor for employees to be willing to accept and implement a change initiative.

The result of the study will imply public institutions, their policymakers (change designers), and leaders who are in charge of implementation. Public organizations in Ethiopia know little about why change efforts fail to deliver their desired outcomes. The importance of change leadership toward effective formulation and implementation of changes has not gotten due attention. At the institutional level, policymakers and leaders will gain good insight into the change management practices of their institution and thereby determine where to intervene and decide what kind of intervention to deploy in the change management process to enhance their employees' level of readiness.

Abbreviations

AGFI: Adjusted goodness-of-fit index; CFI: Comparative fit index; AVE: Average variance explained; CL: Change leadership; CMIN/DF): Chi-square statistics to the degree of freedom; CR: Composite reliability; Cr: Critical ratio; ERC: Employees' readiness for change; GFI: Goodness-of-fit index; KMO: Kaiser–Meyer–Olkin; NNFI: Non-normed fit index; NFI: Normed fit index; OC: Organizational culture; RMSEA: Root-mean-square error of approximation; SMC: Squared multiple correlation; Sig: Significance level; SWR: Standardized regression weight; TLI: Tucker–Lewis index.

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Author contributions

ZM participated in the data collection, analysis and writing of the first (original) draft of the manuscript. AE has mainly participated in the concept development and design of the research methodologies as well as review of the manuscript. MA has contributed by reviewing and edition the final manuscript for submission. He was also supervised the whole process. All authors read and approved the final manuscript.

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Availability of data and materials

The researchers want to assure you that the data we used for the analysis can be made available at any time requested.

Declarations

Ethics approval and consent to participate

The accepted ethical standards have been met in the research process, as well as during preparation of the manuscript for publication. The researchers followed appropriate behavior in conducting the research with regard to the right of respondents who will participate in this research. Informed consent of participants, the willingness to participate and the extent of sharing information are personal right of participants while the survey was observed.

Consent for publication

All authors have agreed to publish the manuscript.

Competing interests

No competing interests have been declared by the authors.

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References

1. Abassi B (2017) Transformational leadrship and change readiness and a moderating role of percieved bureaucratic structure. An empirical investigation. Probl Perspect Manag 15(1):35–44. https://doi.org/10.25111/ppm
2. Adil MS (2014) Impact of leader's change-promoting behavior on readiness to change: a mediating role of organizational culture. J Manag Sci 1(2):113–150. https://doi.org/10.20547/jms.2014.1401202
3. Al-Tahitah A, Abdulrab M, Alwaheeb MA, Al-Mamary YHS, Ibrahim I (2020) The effect of learning organizational culture on readiness for change and commitment to change in educational sector in Yemen. J Crit Rev 7(9):1–8. https://doi.org/10.31838/jcr.07.09.188
4. Al-Ali A, Singh S, Al-Nahyan M, Sohal A (2017) Change management through leadership: the mediating role of organizational culture. Int J Organ Anal 25(4):723–739. https://doi.org/10.1108/IJOA-01-2017-1117
5. Alsaqqa HH, Akyurek CE (2021) Assessment of organizational types, leadership styles and their relationships with in governmental and non-governmental hospitals in Gaza Strip of Palestine. BMC Health Serv Res 21:356. https://doi.org/10.1186/s12913.021-06351-1
6. Arbind S, Patra S, Chatterjee D (2019) Impact of culture on organizational readiness to chnage: context of bank M&A. Benchmarking Int J. https://doi.org/10.1108/BIJ-10-2019-0454
7. Armenakis AA, Bernerth JB, Pitts JP, Walker HJ (2007) Organizational change recipients' beliefs scale: development of an assessment instrument. J Appl Behav Sci 43(4):481–505. https://doi.org/10.1177/0021886307303654
8. Armenakis AA, Brown S, Mehta A (2011) Organizational culture: an assessment and transformation. J Chang Manag 11(3):305–328. https://doi.org/10.1177/0018726793046006O1
9. Armenakis AA, Harris SG, Mossholder KW (1993) Creating readiness for organizational change. Hum Relat 46(6):681–703. https://doi.org/10.1177/001872679304600601
10. Bagozzi RP, Yi Y (1988) On the evaluation of structural equation models. J Acad Mark Sci 16(1):74–94. https://doi.org/10.1007/BF02723327
11. Bartlett JE, Kotrlik JW, Higgins CC (2001) Organizational Research: Determining Appropriate Sample Size in Survey Research. Information Technology, Learning, and Performance Journal 19:43–50
12. Bentler PM (1990) Comparative fit indexes for structural model. Psychol Bull 11(4):445–450
13. Burnes B (2011) Introduction. Why does change fail, and what can we do about it? J Change Manag 11(4):445–450

14. By RT (2007) Organizational change management: a critical review. Med Dent Nurs Allied Health J. https://doi.org/10.1080/14697010500359250
15. Byrne BM (2010) Structural equation modeling using amos: basic concepts, applications, and programming. Taylor and Francis Group, New York
16. Chou P (2014) Does transformational leadership matter during organizational change? Eur J Manag 13(3):49–62. https://doi.org/10.14207/ejsd.2014.v3n3p49
17. Cunningham J, Kempling J (2009) Implementing change in public sector organizations. Manag Dec 47:330–344. https://doi.org/10.1108/00251740910938948
18. Dave B, Devos G, Van Den Voet H (2009) Organizational Change Questionnaire-Climate of change, Process and Readiness: development of new instrument. J Psychol 143(6):559–599
19. David MH, Fedor DB, Liu Yi (2008) The effects of transformational and change leadership on employees' commitment to a change: a multilevel study. J Appl Psychol 93(2):346–357. https://doi.org/10.1037/0021-9010.93.2.346
20. Dimitrios B, Athanasios K (2014) The impact of leadership and change management strategy on organizational culture. Eur Sci J 10:1857–7881
21. Drzensky F, Egold N, Van Dick R (2012) Ready for change? A longitudinal case study of antecedents, consequences of readiness for change. J Change Manag 12(1):95–111
22. Fernandez S, Pitts DW (2007) Under what condition do public managers favor and pursue organizational chnage? Am Rev Public Adm 37(3):324–334
23. Gehan MD, Safan SM, Bakeer HM (2018) Organizational change readiness and manager's behavior in managing change. J Nurs Educ Pract 8:7. https://doi.org/10.5430/jnep.v8n7p68
24. Glaser SR, Zamanou S, Hacker K (1987) Measuring and interpreting organizational culture. Manag Commun Q 1(2):173
25. Guterman D, Lehman-Willenbrocck N, Boer D, Born M, Voel S (2017) How leaders affect followers' work engagement and performance: integrating leader-member exchange and crossover theory. Br J Manag 28(2):1–16
26. Hair FJ, Black CW, Babin BJ, Anderson ER (2010) Multivariate data analysis. Prentice Hall
27. Hamid MG, Ahmad H (2013) The factors affectinf employee commitment to chnage in public sector: evidence from Yemen. Int Bus Res 6(3):75–87. https://doi.org/10.5539/ibr.v6n3p75
28. Haroon B, Hunjra AI, Niazi GSK (2017) How does authetenic Leadership Influence Planned Organizational change? the role of employees' perception: Integration of theory of planned behavior and Lewin's Three step model. J Chang Manag 4(52):1–33. https://doi.org/10.1080/14697017.2027.129937
29. Holt DT, Vandaman JM (2013) Towards a comprehensive understanding of readiness for change: the case for an expanded coneptualization. J Change Manag 13(1):9–18
30. Hobfoll SE, Halbesleben J, Neveu J-P, Westman M (2018) Conservation of resources in the organizational context: the reality of resources and their consequences. Annu Rev Organ Psychol Organ Behav 5(1):103–128. https://doi.org/10.1146/annurev-orgpsych-032117-104640
31. Janićijević N (2012) The influence of organizational culture on organizational preferences towards the choice of organizational change strategy. Econ Ann 193:25–51
32. Johansson C, Åström S, Kauffeldta A, Helldinc L, Carlströmd E (2013) Culture as a predictor of resistance to change: a study of competing values in a psychiatric nursing context. Health Policy. https://doi.org/10.1016/j.healthpol.2013.07.014
33. Karp T, Helgo IT (2008) From change management to change leadership: embracing choatic change in public service organizations. J Change Manag 8(1):85–96. https://doi.org/10.1080/14697010801937648
34. Kim TG, Hornung SH, Denise MR (2011) Change-supportive employee behavior: antecedents and the moderating role of time. J Manag 37(6):1664–1693
35. Kin TM, Omar AK, Nordin MS, Bing KW (2014) Development of change leadership competency model: a structural equation modelong(SEM) approach. Int Stud Educ Adm 42(2):3–43
36. Kotter JP (2012) Leading change. Harvard Business Press
37. Kuipers BS, Higgs M, Kickert WJM, Tummers L, Grandia J, Der Voet V (2013) Managing change in public organizations: a review of literature between 2000 and 2010. Public Adm 92:1–42
38. Latta GF (2009) A process model of organizational chnage in cultural context: The impact of organizational culture on leading change. J Leadersh Organ Stud 16(1):19–37. https://doi.org/10.1177/1548051809334197
39. Mangudjaya W (2015) Leadrship, readiness for change and commitment to change. ResearchGate, Bucharest, pp 197–205
40. Metwally D, Ruiz-Palomino P, Metwally M, Gartzia L (2019) How ethical leadership shapes employees' readiness to change: the mediating role of an organizational culture of effectiveness. Front psychol 10(2493):1–19. https://doi.org/10.3389/fpsyg.2019.02493
41. Mohammed A, Zahid S, Kashif U, Sindhu MI (2017) The role of Leader-Member excahnge in organizational change management: the mediating role of organizational culture. Int J Organ Leadersh 6:32–41
42. Oreg S, Berson Y (2011) Leadrship and employees' reaction to change: the role of leadrers personal attributes and transformational leadership style. Pers Psychol 64:627–659. https://doi.org/10.1080/13594320500451247
43. Osman TC, Atik S (2019) Preparing teachers to chnage: the effect of psychological empowerment on being ready for individual chanage. Res Gate 49(1):73–97. https://doi.org/10.14812/cufej.635770
44. Rafferty AE, Jimmieson NL, Armenakis AA (2013) Change readiness: a multi level review. J Manag 2:110–135. https://doi.org/10.1177/0149206312457417
45. Randall ES, Lomax RG (2010) A beginner's guide to sructural equation modeling. Taylor and Francis, New York
46. Robert VK, Morgan DW (1970) Deteermining sample size for research activity. Educ Psychol Meas 14(2):607–610
47. Schien EH (1985) Organizaational culture and leadership. Jossey-Bass, Sanfransisco
48. Schien EH (1992) Organizaational culture and leadership, 2nd edn. Jossey-Bass, Sanfransisco
49. Santhidran S, Chandran VGR, Borromeo J (2013) Enabling organizational change-leadersship, commitment to change & mediating role of change readidness. J Bus Econ Manag 14(2):348–363. https://doi.org/10.3846/16111699.2011.642083
50. Solomon M (2013) Civil service reform in Ethiopia: issues, lessons, and future directions'. Int J Public Adm 36(4):235–247. https://doi.org/10.1080/01900692.2012.713305
51. Tadesse WM (2019) Public service reform in Ethiopia: challenges and gaps post-implementation'. Africa's Public Serv Deliv Perform 7(1):1–9. https://doi.org/10.4102/apsdpr.v7i1.246
52. Tilaye K (2007) Civil service reform in Ethiopia: achievements, problems and possible solutions'. In: Proceedings of the first national conference on the achievements, challenges and prospects of the civil service reform program implementation in Ethiopia, Ethiopian Civil Service College, Addis Ababa, May 31–June 1, 2007, pp 10–34
53. Tsai Y (2011) Relationship between organizational culture, leadership behavior and job satidfaction. BMC Health Serv Res 11(98):1–9
54. Vakola M (2013) Multilevel readiness to organizational change: a conceptual readiness to organizational change: a conceptual approach. J Change Manag 13(1):96–109
55. Voet JV (2013) The effectiveness and specificity of change management in public organization: transformational leadership and a bureaucratic organizational structure. Eur Manag J 10(1):1–10. https://doi.org/10.1016/j.emj.2013.10.001
56. Voet JV (2016) Change leadership and public sector organizational chnage: examining the interaction of transfromational leadership style and red tape. Am Rev Public Adm 46(6):660–668. https://doi.org/10.1177/0275074015574769
57. Weiner BJ (2009) A theory of organizational readiness for change. Implement Sci 6(67):1–9. https://doi.org/10.1186/1748-5908-4-67

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