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**Organizational culture and affective commitment to e-learning' changes during
COVID-19 pandemic: the underlying effects of readiness for change**

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Abstract

Higher education institutions (HEIs) have been embracing digital transformation for years, but the disruptive influence of the global COVID-19 pandemic has accelerated it. Despite the importance of organizational culture (OC) for the successful delivery of e-learning, empirical studies looking at its impact on academics' readiness and affective commitment to e-learning-induced changes are scant. This study unveils the underlying impacts of multiple employee readiness for change (ERFC) dimensions in the OC-employee affective commitment to change (EACC) relationship. Survey data were obtained from 1,200 Jordanian public HEIs' academics. Structural equation modelling was used to analyze the data, testing the study's six hypotheses. The findings offer a novel contribution by showing that OC types influence different dimensions of ERFC, each having a distinctive impact on EACC. It further shows that two ERFC dimensions, namely *self-efficacy* and *personal valence*, function as full mediators in the relationships between group culture/adhocracy culture and EACC.

Keywords: Organizational culture, Readiness for change, Affective commitment to change, E-learning, Jordan

Organizational culture and affective commitment to e-learning' change during COVID-19 pandemic: the underlying effects of readiness for change

1. Introduction

The COVID-19 pandemic has caused disruptions in educational systems in a way never seen before. Even though the process of digital transformation in Higher Education Institutions (HEIs) has been underway for years, the disruptive influence of COVID-19 has accelerated the process, resulting in many fundamental changes within a matter of weeks as online learning became the primary method of teaching (Shehzadi, Nisar, Hussain, Basheer, Hameed, & Chaudhry, 2020; Yassin, Razak, Saeed, Al-Maliki, & Al-Habies, 2021). Shifting towards online learning was sudden and forced by the unprecedented circumstances of the COVID-19 outbreak; hence, HEIs worldwide have faced multiple obstacles and teething problems adapting to this new setting (Al-Hyari, 2020; Müller, Goh, Lim, & Gao, 2021).

The adoption of e-learning changes, especially by academics, usually falls short of HEIs aspirations (Lu, Jiwen, Diether, Zhang, & Feng, 2020; Mehta, 2021). The short notice to switch to eLearning, combined with a lack of eLearning experience, resulted in stress and anxiety amongst academic staff in many HEIs (Müller et al., 2021). According to multiple researchers, one of the main reasons is the lack of academic staff readiness and affective commitment to implementing various forms of disruptive online learning platforms (Marinoni, Vant Land, & Jensen, 2020). Thus, it is time to understand better the factors that influence academic readiness for and affective commitment to e-learning (hereafter called change) in HEIs (Alqabbani, Almuwais, Benajiba, & Almoayad, 2021; Paliwal & Singh, 2021).

Amongst other contextual factors, organizational culture (OC) was identified as one of the most significant factors that could either enhance or hinder employee readiness for change (ERFC) and employee affective commitment to change (EACC) (Eby, Adams, Russell, &

Gaby, 2000; Choi & Ruona, 2011; Messner, 2013; Neubert & Cady, 2001; Schneckenberg, 2009; Shum, Bove, & Auh, 2008; Weiner, 2009). However, our literature review shows that the connection between OC, ERFC and EACC is still in its infancy and that there is a great need for it to be fully explored (Eby et al., 2000; Choi & Ruona, 2011; Morin, Meyer, Bélanger, Boudrias, Gagné, & Parker, 2016). In particular, our literature review search revealed an absence of specific empirical studies investigating the roles that multidimensional ERFC play as a mediating factor in the OC–EACC relationship.

This study offers a holistic perspective, rather than a partial one, by focusing on the influence of different aspects of organizational culture on EACC and ERFC dimensions. To this effect, the current study addresses the call of previous research studies (Haffar, Al-Karaghoul, & Ghoneim, 2013; Holt, Armenakis, Field, & Harris, 2007; Jones, Jimmieson, & Griffiths, 2005; Olafsen, Nilsen, Smedsrud, & Kamaric, 2021) to investigate the mediating effects of various dimensions of ERFC as novel underlying mechanisms of successful change.

This knowledge helps clarify the mechanisms through which different dimensions of ERFC are influenced by diverse types of OC and distinctively impact EACC. It also provides much-needed guidance for managerial practice to reduce resistance and improve successful e-change implementation in HEIs.

Finally, research studies into organizational changes in HEIs are comparatively underdeveloped and focus on case studies of single institutions (Bleiklie, 2014; Vlachopoulos, 2021). The present study takes a different approach making three significant value contributions. Firstly, using all ten public HEIs in Jordan as the study population, a broader interrogation of data beyond single case studies is presented. It also allows for more robust data and, consequently, more credible generalizations. Secondly, it highlights empirical evidence from the global south with a fresh perspective from the Jordanian context. Thirdly, while the COVID-19 global pandemic adversely affected over 300,000 university learners in Jordan

following the closure of the educational institutions and the movement to online learning (Alsoud & Harasis, 2021), simultaneously, it provided a unique opportunity to retroactively examine the impact of this quantum leap on education delivery and successful change.

This study investigates employees' readiness and affective commitment to e-learning induced changes in the public HEIs within the novel geopolitical context of Jordan, whose culture is notably different to countries (mostly western) covered by previous studies. Jordan is located in the heart of the volatile and unstable Middle East, a country with a fragile, yet calm and shock-absorbing landscape (Al Khattab, Anchor, & Davies, 2008). As Jordanian public HEIs (JPHEIs) provide learning opportunities, they are considered the primary workforce provider not only for Jordanians but also for Syrian, Palestinian and Iraqi refugees (Al-Hyari, 2020).

By investigating the impact of OC on ERFC and EACC, this study provides useful recommendations for enhancing JPHEIs e-learning efficiency. In turn, this will enhance current efforts to prepare job-ready graduates who can find decent jobs in the Jordanian market. This would consequently support the reduction of the influx of refugees into Europe. Therefore, the overarching aim of this study is to investigate how organizational culture and affective commitment to change during the challenging period of COVID-19 can lead to the successful delivery of e-learning based on academics' readiness for change.

2. Theoretical background and hypotheses development

The work of Bandura (1986), who developed the conceptual framework of triadic reciprocity, or reciprocal connections between three sets of influences—behavioral, environmental, and personal—provides the theoretical underpinning for this study. Social cognitive theory distinguishes between acquisition and performance because people do not always practice what they have learned (Bandura, 1986). The central principle of Bandura's theory is that

people strive for a sense of agency or belief that they can apply considerable impact over important events in their lives (Bandura, 2011; Schunk & DiBenedetto, 2020). This premise “serves as the integrative principle in human self-development, adaptations, and change” (Bandura, 2011, p.349). Individuals exert this influence utilizing their cognitive and self-regulatory abilities by identifying goals and applying tactics to reach them. Following that, they assess how well they are doing in terms of achieving their objectives and make adjustments to their approach as needed (Schunk & DiBenedetto, 2020). The theoretical model presented in this study is thus informed and used to explain the impact of organizational culture on fostering or hindering employees’ readiness and affective commitment to e-learning. These relationships and this theory have not been tested before in the higher education and e-learning literature.

2.1 Conceptualizing employee readiness for change and its relationship with affective commitment to change

The resistance to change, and readiness for change of academics in e-learning in HEIs have garnered increasing attention in recent years. Following the COVID-19 pandemic and its consequences, HEIs worldwide have been forced to implement various disruptive online remote learning platforms (Alqabbani et al., 2021; Paliwal & Singh, 2021).

There is a growing body of scholarship that emphasizes the significance of building ERFC and EACC (Haffar et al., 2013; Herold, Fedor, & Caldwell, 2007; Holt et al., 2007; Herscovitch & Meyer, 2002; Malik & Garg, 2017; Shum et al., 2008) as they reflect significant psychological issues encountered by employees who undergo major changes. ERFC stems from the notion of unfreezing developed by Kurt Lewin (1947/1997). Armenakis Harris, and Mossholder (1993, p.681) offered the first definition of micro readiness for change

as an individual's "beliefs and intentions regarding the extent to which changes are needed and the organization's capacity to successfully undertake those change".

While several studies, like Jones et al. (2005) and Armenakis et al. (1993), viewed the ERFC as a one-dimensional construct, Holt et al. (2007) considered it a multidimensional concept comprising four dimensions. These were: "change-specific efficacy, personal benefit gained from change, management support during change and the appropriateness of the change" (Holt et al., 2007, p.232).

On the other hand, Herold et al. (2007) argued that EACC is determined by the person's attitude toward change and their intention to provide support. Most studies advocate that ERFC is the most vital predictor of EACC (Herold et al., 2007; Holt et al., 2007; Neubert & Cady, 2001; Santhidran, Chandran, & Borromeo, 2013).

Many authors, such as Paliwal and Singh (2021), Salvato and Rerup (2011), and Herscovitch and Meyer (2002), observed that self-efficacious employees, or those with greater confidence in their ability to implement organizational changes, have higher EACC. Thus, it is hypothesized:

Hypothesis 1a. *ERFC dimension 'self-efficacy' has a positive relationship with EACC.*

Furthermore, employees' affective commitment to change grows when they perceive a specific change as an efficient method for enhancing efficiency in their organization (Morin et al., 2016; Neves, 2009; Fedor, Caldwell, & Herold, 2006). Therefore, this study suggests that employees who are positive about the appropriateness of a change are more likely to be affectively committed to it.

Hypothesis 1b. *ERFC dimension 'appropriateness' has a positive relationship with EACC.*

In the same vein, Walker, Armenakis, and Bernerth (2007) concluded that employees will be willing to adopt change rather than see it as an obligation if top management

communicates effectively that implementing the change is in the organization's best interests. Furthermore, Fedor et al. (2016) argue that leaders, not only at the top management level, but also at middle- or lower levels, need to be change-oriented in their behavior to increase the likelihood of the team's receptiveness, affective commitment and engagement toward the change agenda. Based on this, one can posit that good management of employee readiness for change would result in higher EACC.

Hypothesis 1c. *ERFC dimension 'management support' has a positive relationship with EACC.*

The human resource (HR) practice of rewarding employees is considered an integral part of ensuring a positive employee attitude towards change (Conway & Monks, 2008). Furthermore, Vakola (2014) and Choi and Ruona (2011) stated that employees who expect benefits such as a promotion would show higher levels of affective commitment to organizational change. Thus, we posit that:

Hypothesis 1d. *ERFC dimension 'personal valence' has a positive relationship with EACC.*

2.2 Conceptualizing the impact of organizational culture on employee affective commitment to change and readiness for change

Multiple authors stress that different organizational culture types influence the level of ERFC (Choi & Ruona, 2011; Eby et al., 2000; Schneckenberg, 2009; Weiner, 2009) and EACC in different ways (Malik and Garg, 2017; Messner, 2013; Shum et al., 2008; Neubert and Cady, 2001). For example, HEIs dominated by a hierarchy culture do not inspire invention and novelty among their employees (Maddux & Johnson, 2010; Zammuto, Gifford, & Goodman., 2000). In these institutions, stability and rigid rules are emphasized. Consequently, employees in these organizations are more likely to avoid taking risks and

exhibit a low degree of readiness and commitment to changes (Cunningham, 2006; Cunningham, Woodward, Shannon, MacIntosh, Lendrum, Rosenbloom, & Brown, 2002; Maddux & Johnson, 2010; McKay, Kuntz, & Näswall, 2013; Neves, 2009). Therefore, it is hypothesized as follows:

Hypothesis 2a. *Hierarchy culture will have a negative relationship with ERFCs.*

Hypothesis 2b. *Hierarchy culture will have a negative relationship with EACC.*

Cameron and Quinn (1999) argue that organizations characterized by an adhocracy culture encourage an individual's inventiveness, which boosts the efficiency of the organization (Dextras-Gauthier & Alain, 2016; Hartnel, Ou, & Kinicki, 2011). This innovative culture that avoids hierarchy is one of the main reasons that made Apple such a successful business. It is noteworthy here the central argument of Steve Jobs was that organizations "have to be run by ideas, not by hierarchy" (Harbott, 2021., p.76).

To this effect, ERFC is positively related to the values of an adhocracy culture (Olafsen, et al., 2021; Jones et al., 2005; Zammuto et al., 2000). Thus:

Hypothesis 3a. *An adhocracy culture will have a positive relationship with ERFCs.*

Similarly, organizations dominated by an adhocracy culture are regarded as diverse and creative workplaces that value agility and change. All employees are encouraged to take charge of change-related issues, and mistakes are tolerated while constructive criticism is accepted (McAdam & Donaghy, 1999; Odom, Boxx, & Dunn, 1990; Olafsen, et al., 2021). Thus, it is argued that such a culture that emphasizes flexibility and encourages creativity positively impacts EACC.

Hypothesis 3b. *An adhocracy culture will have a positive relationship with EACC.*

Jones et al. (2005) enlighten that in institutions dominated by group culture, organizational members suppose they obtain great benefits by actively participating in the change process. Similarly, Snape and Redman (2010) consider training one of the most

significant HR practices valued by employees as it demonstrates that the organization wants to invest in them in the long term. Therefore, this study proposes that employees are more likely to show high readiness for change in organizations characterized by a group culture.

Hypothesis 4a. *Group culture will have a positive relationship with ERFCS.*

These organizations offer employees greater job autonomy and participation in decision-making in a team-oriented environment (Neubert & Cady, 2001). Furthermore, the staff in such organizations are encouraged to share their perspectives and opinions to make relevant joint decisions (Shum et al., 2008). To this end, we suggest that increased participation in decision-making will raise EACC. The preceding discussion leads us to put forward the following hypothesis:

Hypothesis 4b. *Group culture will have a positive relationship with EACC.*

Authors such as Zammuto et al. (2000) and Cameron and Quinn (1999) claimed that institutions characterized by a market culture are more concerned with performing the required work and enhancing profits, with less consideration for employees' morale and wellbeing. Consequently, employees of such institutions have a tendency to exhibit lower degrees of readiness for change.

Hypothesis 5a. *Market culture will have a negative relationship with ERFCS.*

Organizational justice theory indicates that any change or transformation initiative should have the potential to benefit not only companies but also their employees (Luo et al., 2016). This is mostly not the case in organizations driven by a result-oriented ethos. Studies have indicated that employees working in such organizations are likely to perceive any change as being valuable to their organizations' management (Feng, Robin, Fan, & Huang 2020; Haffar, Al-Hyari, Djebarni, Al-Shamali, Aziz, & Al-Shamali, 2021; Neubert & Cady, 2001; Shum et al., 2008). Therefore, we hypothesize:

Hypothesis 5b. *Market culture will have a negative relationship with EACC.*

2.3 Mediating effect of employee readiness for change on the relationship between organizational culture and employee affective commitment to change

The direct-impact arguments for the relationship between OC on EACC seem to be persuasive. Nevertheless, a deeper examination of the literature suggests that OC impacts EACC through its influence on ERFC. That is, ERFC mediates the OC-EACC relationship.

The social cognitive theory principles, developed by Bandura (1986), are used to clarify the mediating role ERFC plays between OC types and EACC. Research indicates that when ERFC is high, employees would be more likely to commit to change by putting more energy into implementing change and show more tenacity to overcome hindrances to change during the implementation process (Gist & Mitchell, 1992; Weiner, 2009). Thus, it is proposed that ERFC mediates the influence of OC types on employee affective commitment to change.

Hypothesis 6. *ERFC mediates the influence of organizational culture types on EACC.*

Figure 1 shows the proposed theoretical model of the current study, which was created by logically combining both the direct effect of OC on EACC and the indirect influence that OC has on EACC through ERFC. Drawing from social cognitive theory, this framework postulates that the more supportive the organization's culture, the higher ERFC will be and the higher the level of EACC. These relationships and this theory have not been tested before in the higher education and e-learning literature.

Figure 1 here

3. Methodology

3.1 Sample and procedure

The research population consisted of all the academic staff (2,782) of the social sciences faculties affiliated with all ten Jordanian public Higher Education Institutions (JPHEIs) that applied e-learning tools for educational continuity from the beginning of the COVID-19 pandemic outbreak (MOHE, 2020).

A sample of 1,200 academic staff was selected using a stratified random sampling method employing proportional allocation to attain a representative target sample. The rationale for this method was the opportunity to obtain more accurate estimates than would be the case with simple random sampling. This is helpful when the population comprises several homogenous groups and makes the study more statistically robust.

As the teaching styles are similar, we focused on academic staff working in social science faculties only, including business, psychology, and law. The final sample ensured all social science faculty members within JPHEIs were proportionally represented. The number of distributed surveys varied according to the number of faculty members within each faculty in order to maintain the correct proportions. The questionnaires were, in particular, distributed amongst 43% of staff at social science faculties in each university. As an example, we distributed surveys to 359 social science faculty members at Al-Balqa University (43% of its 834 social science faculty members), In contrast, we distributed 258 questionnaires to the social science faculty at The University of Jordan (43% of the total 597 academics), and so on.

The data were collected during the COVID-19 outbreak, specifically from October 15th, 2020, to January 15th, 2021. The choice of this period is vital because of the unlikely ex post facto research opportunity it presents following massive global changes in education delivery brought about by the onset of COVID-19 and the ensuing impact on staff, students,

and the management of change in HEIs. The instrument was administered online within each of the ten JPHEIs. Response rates were monitored regularly, with reminder messages sent to prospective respondents to increase the response rate. A total of 783 online questionnaires were returned in all after three months. Of these, 776 questionnaires were usable. This translates into an overall usable response rate of 64.6%.

3.2 Measures

We adopted and translated four valid and reliable instruments to achieve the aim of the current study. A review of previous studies indicates that most scales used to evaluate ERFC measure one aspect of ERFC and treat it as a unidimensional construct (Jones et al., 2005; Cunningham et al., 2002). However, one instrument with high reliability and validity represents a multidimensional construct, which was developed by Holt et al. (2007). This instrument is complementary yet distinctive to the instrument formulated by Herscovitch and Meyer (2002) that assesses commitment to change. Holt et al. (2007) emphasized that the level of EACC is influenced by the level of four dimensions of ERFC. Therefore, we have used the scale developed by Holt and his colleagues (2007) to evaluate the level of ERFC components.

Additionally, we have utilized Herscovitch and Meyer's (2002) scale to measure EACC. We also used the exceptionally reliable and valid Organizational Culture Assessment Instrument (OCAI) developed by Cameron and Quinn (1999) to identify the cultural profile and characteristics of JPHEIs. Multiple studies have used this scale due to its significance in diagnosing organizational culture (Prajogo & McDermott, 2011) and defining the needed changes to boost change implementation success (Haffar, Al-Karaghoul, & Ghoneim, 2014). This scale includes four OC types: "adhocracy culture, group culture, market culture and hierarchy culture". A five-point Likert scale was used to measure the 24 items of OCAI as used by Dellana and Hauser (1999).

The questionnaire was professionally translated using back translation and was pre-tested in a pilot study. Experts and academics from the JPHEIs checked the questionnaire's content validity before distribution to the target sample. Following the pilot study, the experts and academics agreed to minor editing. The modifications were specifically regarding a few typographical errors made to the translated version, following which all reviewers considered the questionnaire fit for purpose.

3.3 Common method bias

To decrease the likelihood of common method bias (CMB), different procedures and measures were utilized. As recommended by Podsakoff, MacKenzie and Podsakoff (2012), we split and randomly ordered the statements pertaining to the independent, mediating, and dependent variables into different parts of the questionnaire to prevent learning process bias while answering the questions. We also approached multiple participants (at least 30) from each HEIs to complete the surveys. This approach increases the degree of confidence in the results and lessen the impact of systematic response bias (Boyer & Verma, 2000).

To ensure that there is no common method bias problem, we used Harman's single factor test to assess whether all variables loaded onto one general factor (Podsakoff et al., 2012). In addition, a confirmatory factor analysis (CFA) was conducted to compare the one-factor model, where all variables are allowed to load onto one general factor, with the hypothesized nine-factor model. The combined evidence ($\chi^2 = 289.1$, $\chi^2 / df = 8.03$, SRMR = .11, RMSEA = .095, CFI = .44) showed that the one-factor model did not fit the data sufficiently, indicating that common method variance was not marked in the data-set.

The CFA results also showed that the nine-factor baseline model had a reasonable fit ($\chi^2 = 38.92$; $\chi^2 / df = 3.24$, SRMR = .041, RMSEA = .053, CFI = .945), and yielded a significantly better fit than the single-factor model ($\Delta\chi^2 (5) = 250.10$, $p < .01$). Consequently,

it can be safely concluded that CMB was unlikely and had no significant impact following Harman's single-factor test. It can also be concluded that, since the nine-factor model has a satisfactory fit, the nine latent constructs (i.e., group culture, adhocracy culture, market culture, hierarchy culture, personally beneficial, management support, self-efficacy, appropriateness, EACC) were distinct constructs and provided evidence for the satisfactory discriminant validity.

3.4 Validity and reliability

CFA was used to assess the construct validity of each construct. Standardized factor loadings of all indicators ranged from 0.692 to greater than 0.947 and were statistically significant ($p < .01$), as shown in Table 1. Additionally, coefficients alpha ($\alpha = 0.7$), composite reliability (CR. = 0.7), and average variance extracted (AVE) across the constructs were well above the threshold values recommended by many studies (Hair, Black, Babin, & Anderson, 2010; Fornell & Larcker, 1981). Thus, convergent validity was supported.

INSERT TABLE 1 HERE

Discriminant validity is supported as the AVE for all the constructs is bigger than 0.50, and the square root of AVE is bigger than the construct's correlation coefficient square with other constructs, as shown in Table 2 (Fornell & Larcker, 1981). Cronbach's alpha is utilized to assess the internal consistency of scales. All α coefficient of the constructs surpassed the 0.7 (Hair et al., 2010; Nunnally, 1978), ranging from .866 to .914, which confirm the scale reliability.

INSERT TABLE 2 HERE

3.5 Results of Structural Equation Modelling Analyses

Structural equation modelling (SEM) simplifies the testing of mediation hypotheses. It performs better than multiple regression for more complicated mediation models handling multiple mediators to multiple independent variables or outcomes (Gunzler, Chen, Wu, & Zhang, 2013). Hence, SEM was used to analyze the data. However, we ensured that the sample size requirements were met before testing our hypotheses. Many recommendations and rules of thumb are found in the literature to identify sample size requirements in SEMs. In this study, the sample size (returned and usable responses) was $N = 776$ and the number of variables $V = 9$. Thus, the ratio N/V equals 86.2:1, surpassing the value of 20:1 threshold (Hair et al., 2010).

We also computed the root-mean-square error of approximation (RMSEA), as it is the most sensitive index of models with misspecified factor loadings (Sila, 2007). Table 3 reveals that the RMSEA for all models are less than .10 indicating a good fit to the data. However, to decrease the impact of sample size in evaluating model fit, we used both CFI and SRMR to assess model fit because they are relatively uninfluenced by sample size (Hooper, Coughlan, and Mullen, 2008). Table 3 shows that the SRMR values ranged from 0.036 to 0.048, and the CFI values ranged from .943 to .968, indicating a good model fit.

INSERT TABLE 3 HERE

We utilized the four-step technique suggested by Howell (2009) to assess the mediation linkages in light of numerous recent studies (e.g., Arya, Mirchandani, & Harris, 2019). Firstly, we examined a model comprising direct links from OC types to EACC. This model indicates that group culture and adhocracy culture have positive impact on EACC 0.238** ($p < .01$), and 0.204** ($p < .01$) respectively. Thus, H3b and H4b are supported.

However, the impact of market culture 0.061 ($p > .05$) and hierarchy culture -0.112 ($p > .05$) are not significant; therefore, H5b and H2b are rejected. As such, examining for mediation for these variables breaches the first test criteria.

Our results also show that the paths from the group ($\beta = 0.316^{**}$, $p < .01$) and adhocracy culture ($\beta = 0.262^{**}$, $p < .01$) types to self-efficacy (ERFC1) are significant. In contrast, the direct path from hierarchy and market to self-efficacy is not. Additionally, the standardized path coefficients from group culture and adhocracy culture to ERFC4- personal valence were significant and in the expected directions: $.406^{**}$ ($p < .01$), $.351^{**}$ ($p < .01$), respectively, while the direct path from hierarchy and market to ERFC4 are not. On the other hand, the findings showed that the direct paths from group ($\beta = .260^{**}$, $p < .05$), market culture ($\beta = .164^{**}$, $p < 0.05$), and adhocracy culture ($\beta = .174^{**}$, $p < 0.05$) to ERFC3- management support, are significant. We then examined the effect of the mediators ERFCs on EACC. The findings indicated that the direct links from two of ERFC dimensions namely self-efficacy ($\beta = .313^{**}$, $p < .01$) and ERFC4- personal valence ($\beta = .362^{**}$, $p < .01$) are positive and significant, supporting H1a and H1d.

Based on the findings in figures 2 and 3, a comparison of Models 4 and 5 shows that the direct relationship between the independent variables (group and adhocracy culture types) and the dependent variable (EACC) became non-significant after the mediators (ERFC1- change efficacy and ERFC4- personal benefit) were included (changing from a statistically significant $.238^{**}$ to an insignificant $.102$ and from a significant $.204^{**}$ to an insignificant 0.94 , respectively), hence filling the fourth condition.

We then compared two models, namely the M4 model (which shows full mediation) and with M5 model (partial mediation model), to understand which model fits better with the data.

INSERT FIGURE 2 HERE

M4 illustrates that the direct links from the adhocracy culture and group culture to personal valence and self-efficacy (mediators), and from the personal valence and self-efficacy (mediators) to EACC, are significant. The statistics for the M5 model exhibit acceptable fit indices, while the full mediation model shows a better match to the data. The significance level of the difference between the two models was also determined using the chi-square difference test, also known as a likelihood ratio test (Prajogo & Sohal, 2006). We further investigated the significance level of the difference between the two models by calculating the discrepancy of the χ^2 values (49.33 and 57.4) with the difference in the degree of freedom (17 and 15). The outcome was $\Delta\chi^2$ of 8.07 with Δdf of 2 is bigger than the value of 5.99 ($p < .05$).

INSERT FIGURE 3 HERE

In addition, personal valence (ERFC4) and self-efficacy (ERFC1) as mediators diminish the strength of the effect of adhocracy culture/group culture on EACC after including ERFC-personal valence and the direct influence of adhocracy culture and group culture on EACC became nonsignificant. These results support the full mediation proposition. This shows that ERFC-personal valence and ERFC-change efficacy fully mediated the relationship between adhocracy culture/group culture and EACC.

The significance of the mediating roles of personal valence and change efficacy was further confirmed by the bias-corrected bootstrap. As shown in Table 4, the findings indicated that group culture and adhocracy culture have positive impacts on EACC via personal valence ($\beta = 0.19$, 95% CI = 0.13 to 0.24) and ($\beta = 0.22$, 95% CI = 0.18 to 0.27) respectively, and this is a full mediation. Also, the positive influence of group culture and adhocracy culture on EACC is mediated by ERFC-change efficacy ($\beta = 0.31$, 95% CI = 0.20 to 0.41) and ($\beta = 0.26$,

95% CI =0.21 to 0.32). These findings indicated that ERFC-personal valence and ERFC-change efficacy completely mediate the relationship between adhocracy culture/group culture and EACC.

4. Discussion

This study examines the mediating impact of ERFC dimensions in the relationship between OC and EACC in JPHEIs. The findings of the present study support the results of Holt et al. (2007), who treated employee readiness for change as a multidimensional construct and concluded that the ERFC components are distinct. A few authors, such as Conway and Monks (2008), Choi and Ruona (2011), Paliwal and Singh (2021), Salvato and Rerup (2011) have concluded that ERFC-self-efficacy and ERFC-personal valence are associated with higher levels of EACC. The same results have been demonstrated in JPHEIs, where the level of EACC is positively affected by self-efficacy and personal valence.

We proposed that ERFC-appropriateness has a positive effect on EACC. It was expected that academics who believed that e-learning changes were appropriate and beneficial for the organization would be keener to implement the change effectively. That hypothesis was not supported, however. These disparate findings suggest that the impact of the perception of appropriateness on affective commitment to change initiatives (e-learning changes) may be influenced by the characteristics of the group undergoing changes, which would alter these relationships. For example, it seems that employees value change less in organizations that do not have a high level of humane orientation and are dominated by hierarchy culture, such as JPHEIs. This could be viewed because of the organization's lack of attention to employee welfare. In contrast, employees are more interested in rewards that benefit them and are more concerned about themselves than with the organization.

Overall, the findings of our study show that OC has a considerable impact on employees' readiness and affective commitment to change. This supports the results of previous studies which concluded that OC is a vital contextual construct that moderates ERFC levels (Eby et al., 2000; Vakola & Nikolaou, 2005; Weiner, 2009) and EACC levels (Richard, McMillan-Capehart, Bhuian & Taylor, 2009; McKinnon, Harrison, Chow, & Wu, 2003; Odom et al., 1990). According to some previous research (Richard et al., 2009; McKinnon et al., 2003; Odom et al., 1990), group and adhocracy cultures were related to higher levels of EACC and ERFC. Meanwhile, research work conducted by other researchers (Eby et al., 2000; Jones et al., 2005; Zammuto et al., 2000) found market culture to be related to lower levels of ERFC. We found similar results in JPHEIs where both group culture and adhocracy culture have a significant positive impact on EACC. However, their impact was only on three out of four ERFC dimensions (self-efficacy, personal valence, and management support). Also, the influences of group culture and adhocracy culture on self-efficacy and personal valence are more significant than their influence on ERFC-management support. It appears that group and adhocracy culture types, which have a significant influence on EACC and ERFC, render the impact of a hierarchy culture relatively less significant. It is clear from these results that an elevated level of ERFC is dependent upon the existence of the values of both group and adhocracy culture. Such values motivate employees to be more willing to adopt change and actively get involved in the implementation process. However, based on the SEM analysis, the results from this study indicate that group culture has a higher and more significant impact, followed by adhocracy culture on ERFC-self-efficacy and ERFC-personal valence in JPHEIs. It seems that employees' attitude toward change in JPHEIs is influenced more by group culture values, which stress the long-term benefits of organizational members and attach more standing to morale, followed by an adhocracy culture which stimulates

individual initiatives and creativity. In other words, they give more weight to group culture values when formulating their attitude towards change.

The results further show that self-efficacy and personal valence function as a full mediator to canalize the impact of group culture/adhocracy culture on EACC. Our study supports the findings of previous studies, which indicate a positive impact of group and adhocracy OC on EACC (McKinnon et al., 2003; Richard et al., 2009; Shum et al., 2008). However, the results of our analysis indicated that both ERFC-self-efficacy and ERFC-personal valence fully mediate the OC-EACC relationship. The evidence presented above indicates that employees who observed strong group and adhocracy values in their organizations showed higher levels of self-efficacy and personal valence and showed more affective commitment towards change implementation.

These findings go one step further by displaying that the influences of group and adhocracy culture on EACC are canalized by ERFC-self-efficacy and ERFC-personal valence. This may suggest that the effect of organizational culture is a successive process impacting ERFC and, in turn, EACC, as opposed to the conventional belief that it simultaneously influences both ERFC and EACC. Our findings indicate that a higher level of EACC is not a direct result of OC but rather of ERFC1-self-efficacy and ERFC4-personal valence transmitting the influence of group and adhocracy culture to EACC. Thus, incorporating the mediating roles of self-efficacy and personal valence will help us better understand the relationship between corporate culture and EACC.

The findings also expand the research of Jones et al. (2005) by offering empirical evidence about the association between organizational culture and ERFC by also including EACC in this relationship. The empirical evidence of the mediation of ERFCs in the connection between OC types and EACC contributes significantly to describing the underlying psychological mechanisms in the OCs-EACC relationship.

4.1 Theoretical implications

The current research addresses the call of previous research studies (Haffar et al., 2013; Holt et al., 2007; Jones et al., 2005; Olafsen et al., 2021) to investigate the mediating role of different dimensions of ERFC as novel underlying mechanisms to implement successful e-learning change in the context of HEIs. Drawing from social cognitive theory, we developed and validated a framework that integrates the direct effect of organizational culture with its indirect impact (via ERFC dimensions) on EACC.

By presenting and supporting both the direct and indirect differential impacts of OC types on EACC, the current research provides novel evidence that will help theorize the mechanisms of the connection between OC and EACC to provide a better understanding of the relationship between OC, ERFC and EACC. Our findings show that different dimensions of ERFC are influenced by OC types, each having a distinctive impact on EACC. This aids in identifying the most vital ERFC dimensions organizations should prioritize to enhance the level of EACC, particularly during the challenging period of COVID-19.

The relationships mentioned above have not been previously tested in the higher education and e-learning literature. This study contributes toward investigating employees' attitudes and affective commitment to e-learning changes in HEIs, particularly during the challenging period of COVID-19.

A significant theoretical contribution of this study is the role of social cognitive theory's behavioral, environmental, and personal components in generating and driving change in HEIs. Based on the findings of this study, HEIs must consider the association between academic staff readiness and affective commitment to e-learning changes to successfully implement online learning during and after the COVID-19 pandemic. When individuals contribute to substantive changes in the online learning environment at various times of their careers, they indirectly

influence notable events in their lives. This conviction underscores the very essence of the theory and is verified by our findings.

4.2 Practical Implications

The concept of online learning seems to be here to stay. A paradigm shift was established in the teaching practices of the HEIs within months of the start of the coronavirus pandemic as academics acquired online experience. HEIs must be encouraged to think about online learning and train their academic staff to become proficient with the relevant technologies and software related to learning and teaching.

Another important implication is that the government and educational units must enhance infrastructure provisions and support for e-learning following the unexpected challenges posed by COVID-19. This would benefit both students and HEIs as well as ensure the alignment of Jordanian HEIs to global best practices following any future unexpected disruption.

To optimize the e-learning-induced changes and implementation processes in JPHEIs, change agents must ensure that all employees are ready to commit to e-learning change-induced efforts. To do so, they must first assess the current level of ERFC and EACC and identify whether current dominant organizational culture types are supportive of e-learning induced changes. Low levels of ERFC and EACC in JPHEIs should be considered an indicator for organizations to identify problems that hinder successful change implementation. This would help determine the required actions to enhance e-learning implementation success in JPHEIs.

This study has demonstrated that to raise the ERFC level and enhance the possibility of EACC in JPHEIs, top management in JPHEIs need to establish supportive organizational culture values that facilitate the successful implementation of change. This would help them modify their prevailing culture towards group and adhocracy culture values by embracing flexible policies and stressing the involvement of academics and other professional staff.

As the results showed that self-efficacy and personal valence are the two most essential ERFC factors mediating group culture/adhocracy culture and EACC, we recommend that JPHEIs prioritize these dimensions to enhance academic staff commitment to e-learning changes. The change agents need to encourage ERFC and develop positive attitudes amongst their employees towards e-learning change applications by paying more attention to HR practices valued by academic staff, such as promotions, training and development. While doing so, top management in JPHEIs should emphasize the advantages of long-term profits (personal valence) and focus on employee improvements, including providing staff with training on the execution of new practices to help them alter their behaviors to amalgamate with the continuous change culture. This will automatically lead to strengthening employees' feelings of self-efficacy and fostering affective commitment to e-learning and various forms of remote learning disruptive platforms.

5. Conclusion

Although HEIs have offered online education for many years, the COVID-19 pandemic created an exponential demand for it. COVID-19 has been an unusual challenge for academic delivery in HEIs, one which has required a well-reasoned response and, thus, provided an ex post facto research opportunity. The aim of this study was to identify the impact of organizational culture on the affective commitment to e-learning-induced change and mediating impact of academic staff readiness for e-learning in this relationship during the earlier months of the pandemic COVID 19. To address the aim, this study collected data via a survey from Jordanian public Higher Education Institutions' academics between October 2020 and January 2021. Overall, the findings of our work show that OC types influence different dimensions of ERFC, and each has a distinctive influence on EACC. Thus, our study provides a deep understanding of the connection between OC, ERFC and EACC, which has

been overlooked in previous research. This will help leaders in higher education increase employee readiness for e-learning changes during and after the COVID-19 outbreak, particularly since e-learning remains essential to HEIs to maintain curricula delivery during emergencies and crises. After the study's conclusions, the following section explains its limitations and future directions of this research.

5.1 Study limitations and further research

Despite the fact that the study's objectives were met, some limitations should be should be mentioned. Firstly, a cross-sectional research design was used in this research. Unfortunately, such a design does little to help us understand the causal relationship between the variables investigated. To investigate change over time to allow for causal relationships to be identified, we suggest using longitudinal designs in future studies. Secondly, the current research collected data by means of self-reporting surveys, might increase the risk of CMV (Cooper-Thomas et al., 2018). Nevertheless, the self-reporting approach is seen as sensible for examining psychological variables (Morin et al., 2016). Moreover, the statistical findings of Harman's single-factor test showed that CMV did not exist in our research scales and had no substantial influence on our results. Nonetheless, future studies should use several sources to evaluate the variables and decrease CMV.

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Table 1. Construct Reliability and Convergent Validity Coefficients.

Construct	No. of items	SFL (min-max)	α	CR	AVE	Mean	std. deviation
<i>ERFC- Personally Beneficial</i>	7	.692-.909	.866	.817	.716	2.53	.768
<i>ERFC- Management Support</i>	6	.688-.892	.906	.922	.722	2.77	.811
<i>ERFC- Self-efficacy</i>	6	.718-.929	.888	.894	.734	2.50	.722
<i>ERFC- Appropriateness</i>	7	.692-.878	.914	.926	.740	2.92	.703
<i>EACC Group</i>	6	.746-.882	.878	.892	.734	2.54	.765
<i>Adhocracy</i>	6	.684-.929	.898	0.891	.715	2.89	.721
<i>Market</i>	6	.702-.947	.852	.857	.788	2.79	.758
<i>Hierarchy</i>	6	.693-.905	.906	.909	.743	3.69	.829
	6	.736-.877	.911	.905	.752	3.52	.876

* SFL: Standardized Factor Loading; Cronbach α coefficient; CR, composite reliability; AVE, average variance extracted.

Table 2. Correlation between OC types, ERFC and EACC

	1	2	3	4	5	6	7	8	9
Group	(0.845)								
Adhocracy	.146*	(0.887)							
Market	.066	-.112	(0.861)						
Hierarchical	.036	.072	.136*	(0.867)					
Self- efficacy	.401**	.386**	.129*	-.114	(0.856)				
Appropriateness	.234**	.184*	.252**	-.129*	.110*	(0.860)			
Management support	.303**	.286**	.335**	-.124*	.218**	.220**	(0.849)		
Personal valence	.408**	.395**	.148*	-.140*	.251**	.148*	.165*	(0.846)	
EACC	.358**	.319**	.141*	-.134*	.412**	.232**	.294**	.415**	(0.85)

*Diagonal elements (bold) are the square root of average variance extracted (AVE) between the constructs and their measures. Off-diagonal elements are correlations between constructs.

*Sig<.05, ** sig<.01

Table 3. SEM results for hypotheses testing (N=776)

Model Specifications and Fit Indices	χ^2	χ^2 / df	GFI	RMSEA	CFI	SRMR	N/t
M1	25.81	4.30	0.926	0.0652	0.943	0.048	86.2
M2	44.67	3.72	0.934	0.0592	0.951	0.044	32.3
M3	29.58	4.93	0.922	0.0711	0.949	0.040	86.2
M4 Full Mediation	49.33	2.90	0.944	0.0495	0.968	0.036	70.5
M5 Partial Mediation	57.42	3.82	0.938	0.0600	0.962	0.040	59.6

			Model 1	Model 2	Model 3	Model 4	Model 5
GRC	→	EACC	0.238**				0.102
ADC	→	EACC	0.204**				0.094
MAC	→	EACC	0.061				
HI	→	EACC	-0.112				
GRC	→	ESE		0.316**		0.224**	0.196**
ADC	→	ESE		0.262**		0.193**	0.178**
MAC	→	ESE		0.04			
HIC	→	ESE		-0.026			
GRC	→	EA		0.086			
ADC	→	EA		-0.009			
MAC	→	EA		0.177*			
HIC	→	EA		0.123			
GRC	→	EMS		0.26**			
ADC	→	EMS		0.174*			
MAC	→	EMS		0.164*			
HIC	→	EMS		0.002			
GRC	→	EPV		0.406**		0.242**	0.206**
ADC	→	EPV		0.351**		0.266**	0.218**

MAC	→	EPV	0.074		
HIC	→	EPV	-0.016		
ESE	→	EACC	0.313**	0.247**	0.185**
EA	→	EACC	0.109		
EMS	→	EACC	0.107		
EPV	→	EACC	0.362**	0.216**	0.211**

*Sig<.05, ** sig<.01, n.s. denotes non-significant

Notes: χ^2 = model chi-square; df = degree of freedom; χ^2 / df = GFI =goodness-of-fit index; RMSEA = root-mean-square error of approximation; CFI = comparative fit index; SRMR= standardised root mean square residual.

GRC= group culture, ADC= adhocracy culture, MAC= market culture, HIC= hierarchy culture, ERFC1- self-efficacy= ESE, ERFC2-Appropriateness= EA, ERFC3-managemet support= EMS, ERFC4- personal valence=EPV

Table 4. Bias corrected bootstrap tests for mediating effects

Path	Standardized β	Standardized 95% CI	
		Low	High
Group Culture- Self-efficacy- EACC	0.31***	0.20	0.41
Adhocracy Culture- Self-efficacy- EACC	0.26***	0.21	0.32
Group Culture- Personal Valence- EACC	0.19**	0.13	0.24
Adhocracy Culture - Personal Valence- EACC	0.22***	0.18	0.27

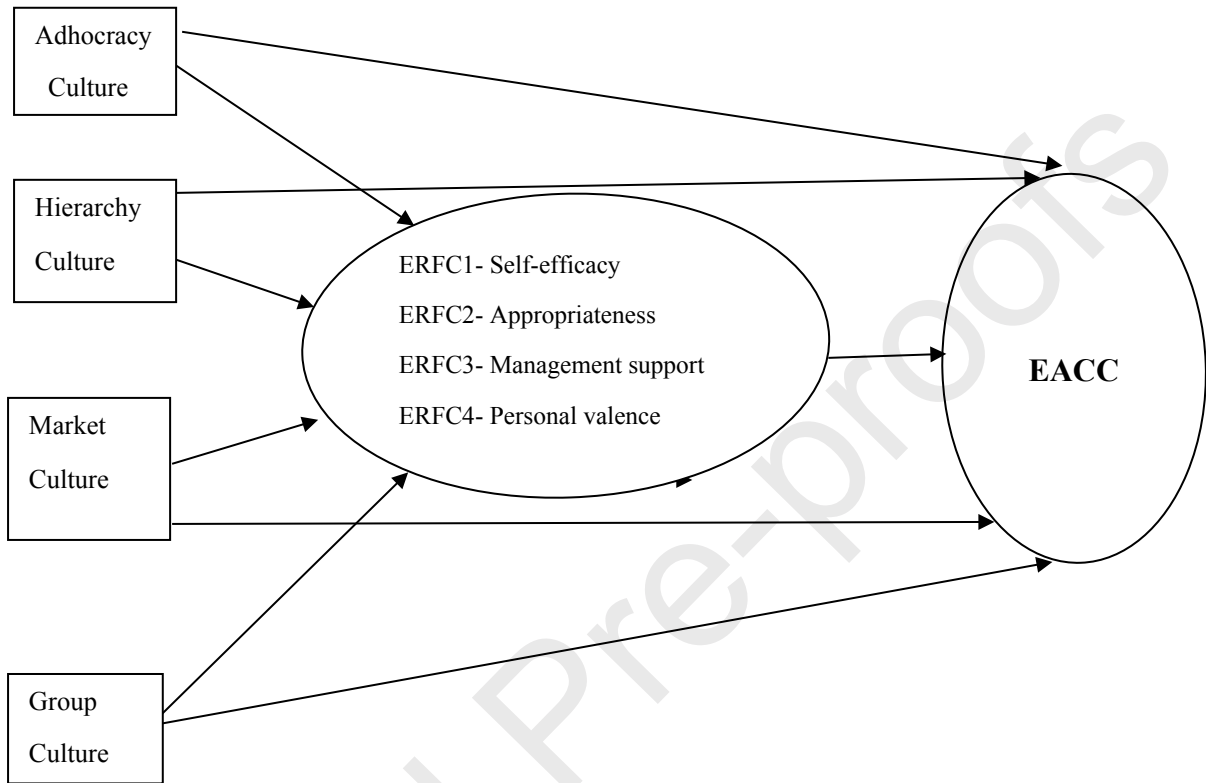
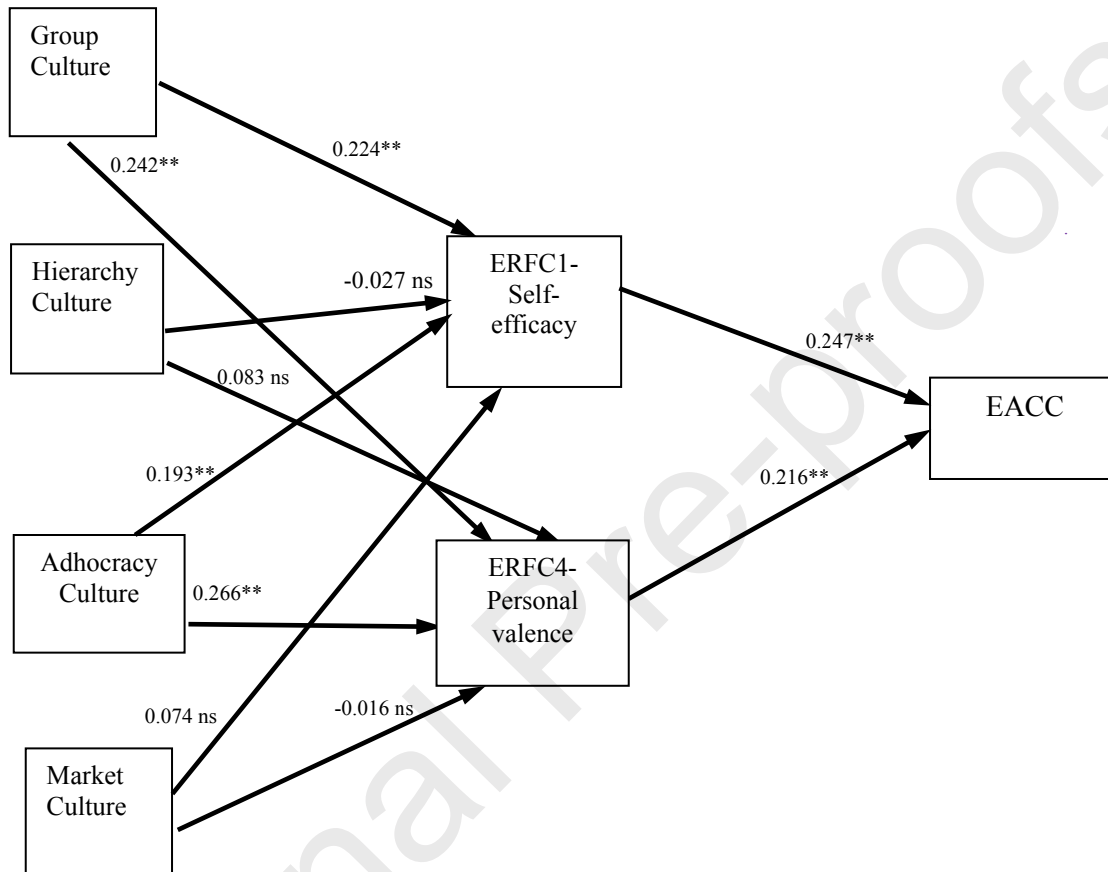
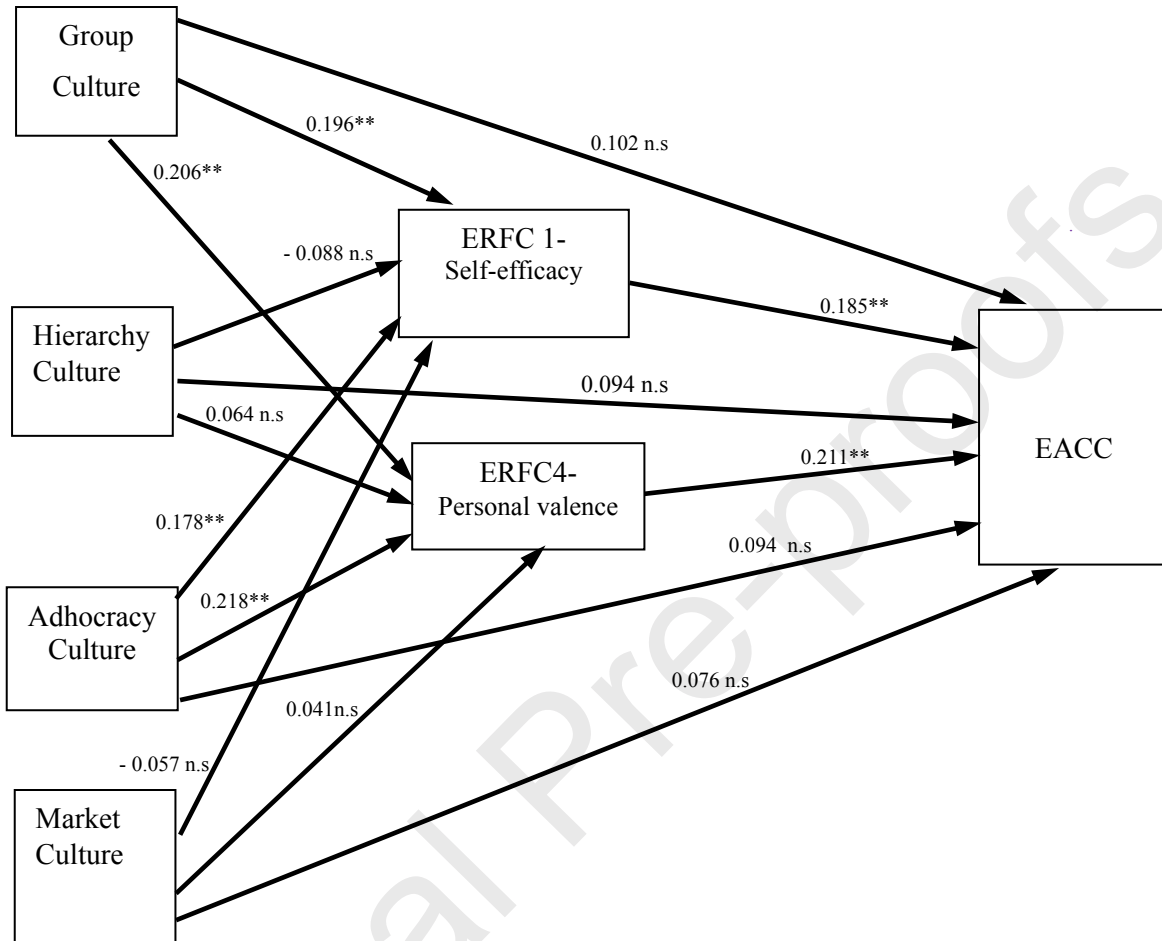


Figure 1. Proposed Conceptual Framework



*Sig<.05, ** sig<.01, n.s. denotes non-significant

Figure 2. The structural relationship between OC types (group and adhocracy culture) and EACC with a full mediation by ERFC1-Self-efficacy and ERFC4-Personal valence



*Sig<.05, ** sig<.01, n.s. denotes non-significant

Figure 3. The structural relationship between OC types (group and adhocracy culture) and EACC with a partial mediation by ERFC1-Self-efficacy and ERFC4- Personal valence

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