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The Role of Organization Culture in Predicting Organizational Effectiveness: A Case from Developing Countries

Faqir Sajjad Ul Hassan[1,*]; Bahadar Shah[2]; Malik Ikramullah[3]; Tariq Zaman[4]; Hamad Khan[5]

[1]PhD Scholar, Department of Public Administration, Gomal University, 29050, Dera Ismail Khan, Pakistan
[2]Dean, Faculty of Law and Administrative Sciences, Hazara University Mansehra, 21300, Mansehra, Pakistan
Email: bahadarshah@hu.edu.pk
[3]PhD Scholar, Department of Public Administration, Gomal University, 29050, Dera Ismail Khan, Pakistan
Email: ikramphdscholar@gmail.com
[4]PhD Scholar, Department of Public Administration, Gomal University, 29050, Dera Ismail Khan, Pakistan
Email: tariqazama@yahoo.com
[5]PhD Scholar, Department of Public Administration, Gomal University, 29050, Dera Ismail Khan, Pakistan
Email: hamaddik@hotmail.com
[*]Corresponding author.
Address: Department of Public Administration, Gomal University, 29050, Dera Ismail Khan, Pakistan
Email: faqirphd@yahoo.com

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Abstract

This study aims to extend cross-cultural research in examining the potential influence of organizational culture on organizational effectiveness in the context of higher education institutions of the province of Khyber Pakhtunkhwa, Pakistan. A non-experimental and cross sectional perceptual data was collected using survey questionnaire through the senior faculty members and administrators. Selection of the subjects was made on one of the most efficient probability sampling techniques namely disproportionate stratified random sampling. Further, the measurement instruments based on a competing values framework of renowned scholars in the field were adopted to tape both of the study variables. Grounded on collected data for direct effect of organizational culture on organizational effectiveness was empirically tested via multiple regression analysis. Overall, the resultant information of regression model revealed organizational culture as a significant predictor of organizational effectiveness. Moreover, out of four traits of organizational culture, two traits i.e., clan, adhocracy showed significant positive relationships to organizational effectiveness, while bureaucratic type of culture exhibited as inverse association and seemed in line of prior research. Contrarily, exception is noticed for market type of culture. Discussion of these findings followed by implications, limitations, direction for future research and conclusion are given subsequently in the article.

Key words: Organizational culture; Competing Values Framework (CVF); Organizational effectiveness; Higher education institutions

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INTRODUCTION

Effectiveness of an organization is a key concern to administrators as well as owners. Thereby, enrich literature is available on the relationship of Organizational Effectiveness (OE) with numerous variables to enhance the understandings of this central concept. Recently, one of these variables i.e., Organizational Culture (OC) which is sometime referred to as corporate culture (Gebauer, Edvardsson, & Bjurko, 2009) and it relation to OE has magnetized a great deal of consideration from researchers around the world (e.g., Denison, Haaland, & Goelzer, 2004; Hilal, Wetzel, & Ferreira, 2009; James & Connolly, 2009; Kim, Kim, & Kim, 2011; Lee & Yu, 2004; Lejeune & Vas, 2009; Yilmaz & Ergun, 2008). But unfortunately, these recent empirical inquiries and even initial writers who have established theories of association between OC and OE (Denison, 1990; Denison & Mishra, 1995; Kotter&Heskett, 1992; Ouchi, 1980; Wilkins &Ouchi

1983) have mostly concentrated on the American, western or developed countries' contexts. However, cross-cultural research is endorsed and some authors proposed that many theories of management call for modification in distinct national settings (Fey & Denison, 2000; Trompenaars, 1994; Hofstede, 1980).

This study is set out to address the issue of cross culture research to analyze possible connection between OC and OE in the context of Higher Education Institutions (HEIs) of the province of Khyber Pakhtunkhwa, Pakistan. The study purported to realize twofold objectives, first, to validate the psychometric properties of western instruments that are developed to measure the constructs of OC and OE. Secondly, to examine whether OE can be predicted via OC in the context of developing country such as,Khyber Pakhtunkhwa, Pakistan? And if so, which of the OC type(s) are more imperative in explaining OE?

The proceeding few pages of literature review section introduce the concepts one by one. And, thereafter their relationships to each other in different settings around the globe is presented, which consequently help in setting forth the hypotheses of this study to answers the above stated questions.

1. LITERATURE REVIEW

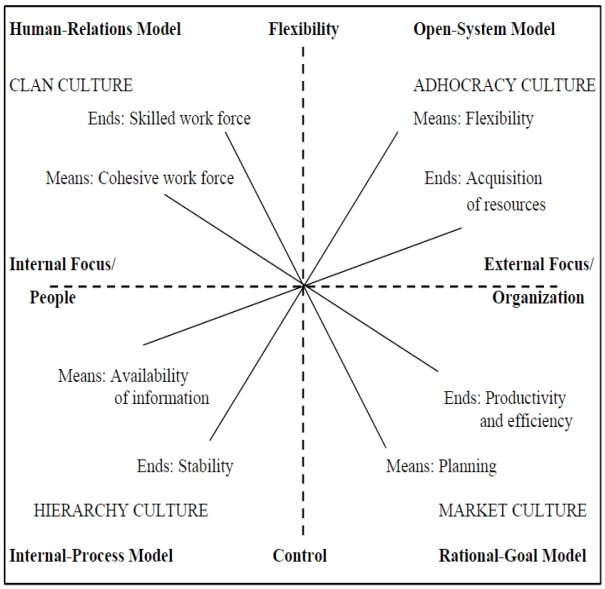
1.1 Organizational Culture

The concept of culture inherently belongs to the field of anthropology and over a century it has been focus of scholars' interest to comprehend ancient societies (Hatch, 1993; Kotter & Heskett, 1992). However, the OC emerged in early 1970s in the literature of organization and management (e.g., Clark, 1972; Turner, 1973). Itwas widely accepted by the researchers of the subject up to 1980s (Deal & Kennedy, 1982; Nicholls; 1985; Ouchi, 1980, 1985; Schein, 1984; Smircich, 1983), while roots of empirical work are seen later in 1990s (Gordon & DiTomaso, 1992). Despite about half a century OC resides in attention of theoreticians.But, the definition and conceptualization of organization cultureis still obscure (Denison et al., 2004). Cameron and Ettington (1988) reported at least 17 definitions to advocate the diversity and lack of unanimity on meaning of the concept. For instance, some elucidate organization cultureas "beliefs" and "shared meanings" (Davis, 1984; Lorsch, 1985), while Dyer (1985) and Schein (1992) ascribe it "assumptions", Barney (1986) and Broms and Gahmberg (1983) view it as "central values", whereas Goffee and Jones (1996) expound it as "glue that holds organizations together". Nevertheless, in this study, we consider organization culture as "the patterns of interpretations people form about the manifestations of their institutions' values, formal rules and procedures, informal codes of behavior, rituals, tasks, jargon, and so on" (Martin, 1992).

Further, though measurement of organization culture due to its multiple conceptualizations has proven difficult. Yet, various conceptual models and typologies offered by several organizational researchers. For example, Ouchi (1980) and Wilkins and Ouchi (1983) suggested a threefold typology culture types i.e. clans, markets and bureaucracies. With a different perspective Schein (1992) contends that culture exists simultaneously on three levels namely *artifacts, assumptions, and values* which is congruent to the view of following few researchers (e.g., Dandridge, Mitroff, & Joyce, 1980; Pettigrew, 1979). Additionally, a four dimensional stance to classify national culture in terms of power distance; uncertainty avoidance; individualism/collectivism; and masculinity/femininity by Hofstede (1980) also applied in organizational studies (Furnham & Gunter, 1993). More recently, Denison (1990) and Denison and Mishra (1995) categorize organization cultureinto four different traits labeled as involvement, consistency, adaptability, and mission.

However, for the purpose of this article to measure organization cultureand relevancy to Higher Education Institutions (HEIs), an added version of Ouchi's threefold typology and consistent to Denison's model, a Competing Values Framework (CVF) of four types of organization culturerecommended by Cameron and Ettington (1988) and Cameron and Quinn (2006) appear to be apposite and reliable. As such, first it captures the holistic view of culture types that are accordant to the prevalent literature on organization culture(Zammuto & Krakower, 1991). Secondly, it is harmonious with the several ways HEIs have been approached by scholars (Smart & John, 1996). Finally, it has been extensively used in empirical inquires with special reference to HEIs (e.g., Cameron & Freeman, 1991; Fjortoft & Smart, 1994; Smart, 2003; Smart & John, 1996; Smart, Kuh, & Tierney, 1997).

The CVF classifies various typologies of OCinto two contrasted axes which give birth to four types of organization culture: clan, adhocracy, hierarchy/ bureaucratic and a market culture. See Figure 1 exhibiting that first axis reflects a set of competing values related to people focus i.e., internal emphasis in terms of integration and cohesion to maintain the existing organization, in contrast to external focus on organization such as rivalry, adaptation, and interaction with the environment. Similarly, the second values dimension focuses on flexibility versus control and stability i.e., one side of the axis represents a focus on change and spontaneity, while other end characterizes an emphasis on stability, control, predictability and order.



Source: Cameron and Quinn (2006); Quinn and Rohrbaugh (1981, 1983); Robbins and Mathew (2009)

Figure 1
The Competing Values Framework/ Model

Now juxtaposing of these two axes reveal four types of cultural orientations. Cameron and Freeman (1991), Cameron and Quinn (2006) and Smart and John (1996) explain this CVF as, for example, from Figure 1 clan culture type (upper left quadrant) appears to stress internal focus and flexibility. Thereby, typified with core values such as trust, cohesiveness, participation, sense of family, affiliation and involvement. In this trait of organization culture, leaders demonstrate mentoring, facilitating, supportive and participative styles. And, strategic orientation stresses human development, teamwork, morale and organizational commitment. The upper right sector of Figure 1 shows the adhocracy culture which emphasizes external positioning as well as flexibility and so core values represent as innovation, entrepreneurship, adaptability, dynamism, creativity and development.Dominant leaders' styles in this trait seem as risk taker, entrepreneurial and innovators. While, strategic orientation focuses on growth and the new resource attainments.

Next, bottom right portion of Figure 1 depicts market culture which also emphasis external edge but stresses on stability dimension instead of flexibility. It characterizes the core values like goal achievement, productivity, profitability and efficiency. And, leaders mainly distinguish as directives, producer, decisive and instrumental. Further, strategic orientation concentrates on competitions and performance. Finally, the lower left part of Figure 1 shows hierarchy/bureaucratic culture that has an internal organizational focus with control and stability emphasis. It represents core values in the shape of implementing order, uniformity, efficiency and rule and regulations. Moreover, leaders in this culture identified as cautious, coordinator or organizer, whereas strategic emphasis is on permanence and stability. A particular organization may reflect the attributes of different cultures types, however a central type of culture that is followed in an organization can be identified (Smart et al., 1997; Fjortoft & Smart, 1996).

1.2 Organizational Effectiveness

Like culture, the concept of OE has also old history and abstract nature as well. Over a century, it has been pivot to the literature of organizational theory. The renowned theorists, like, Weber, Taylor, Fayol and Barnard were actually intended to formulate the models of effective organizations (Boyne, 2003). Due to its abstract nature considerable disarray in the literature has been reported pertaining to the definition, delimitation, and apposite criteria to evaluate effectiveness of an organization (Cameron, 1986). Consequently, several approaches were proposed to tape the concept and from time to time replaced by newer with the dissatisfaction of previous model. For instance, some perceive it in terms of the extent to which an organization realizes its stated goals (Etzioni, 1964; Price, 1968; Steers, 1975). This view is labeled as goal attainment approach. The systems resource is an alternate model which emphasizes the relationships between the organization and its environment (Scheid & Greenley, 1997). It defines effectiveness as "the ability of the organization ... to exploit its environment in the acquisition of scarce and valued resources" (Yuchtman & Seashore, 1967, p. 898). The goal attainment approach focuses on organizational outputs,whereas the system resource approach focuses on inputs. A third approach to determining OE is called the internal process approach, which focuses on the throughputs or transformation processes found in an organization. According to internal process perspective, "effective organizations are those with an absence of internal strain, whose members are highly integrated into the system, whose internal functioning is smooth and typified by trust and benevolence toward individuals, where information flows smoothly both vertically and horizontally and so on" (Cameron, 1980, p. 67).

Though, experts point out that none of the above stated models captures the total construct space or the total meaning of organization effectiveness. Each of the models of effectiveness is valuable in its own right, because it includes distinctions absent in the others. But, no model has enough explanatory power to supersede the others (Cameron, 1980; Khanka, 2007). In order to develop an integrative approach different efforts were made. And, consequently a comprehensive framework in the form of Competing Values Model emerged by the result of multidimensional scaling (for details see Quinn & Rohrbaugh, 1981, 1983). This framework not only subsumed all the previous models into one, but

also resolved the dilemmas of three sets of competing values that were present in the organization literature. Two of the three sets of competing values have been already discussed and the third set of values is linked to "organizational means and ends", from an emphasis on important "processes (e.g., planning and goal setting) to an emphasis on final outcomes (e.g., resource acquisition)". Again from Figure 1, juxtaposing of these three values dimensions yield eight cells or sets consisting of large number of OEcriteria and synthesized into four models or definitions of OE (e.g., Quinn & Rohrbaugh, 1981, 1983; Robbins & Mathew, 2009). These eight cells can be observed in Figure 1.

Although, as a general organization properties the competing values model captures exhaustive evaluation criteria (Robbins & Mathew, 2009) and accordingly it is utilized in this study. Yet, given that the HEIs are characterized by an absence of measurable goals, loose coupling, little direct connection between acquired resources and products, an ability to ignore major constituencies, and so on (Cameron 1978, 1980). Thus, these properties distinguish HEIs form other types of organizations (Kwan & Walker, 2003). And, therefore owing to the special nature of HEIs it is important to put the specific set of criteria so that a complete view of OE can be grasped in the present study. In this regard the first and most cited study (for HEIs) in the literature arose in 1978 by Cameron. His literature review on OE generated 130 variables and subsequently used as a framework for interviews he conducted at several colleges and universities. As a result, certain clusters or items appeared from the interviews and Cameron grouped them into nine dimensions for measuring effectiveness, these are: "student education satisfaction, student academic development, student career development, student personal development, faculty and administrator employment satisfaction, professional development and quality of the faculty, systems openness and community interaction, ability to acquire resources, and organizational health". Commenting on Cameron's nine dimensions Smart and Hamm (1993) stated that these dimensions of OE delineate key management and institutional performance indicators of HEIs. Subsequently, these nine dimensions tested as valid and used in numerous inquiries in measuring OE (e.g., Cameron & Freeman, 1991; Fjortoft & Smart, 1994; Kwan & Walker, 2003; Lysons, 1990; Lysons & Hatherly, 1998; Smart, 2003; Smart & John, 1996; Smart et al., 1997).

1.3 Organizational Culture and Organizational Effectiveness

The contention of Wilkins and Ouchi's (1983) open the doors for researchers to link OC and effectiveness who stated that "organizational performance cannot be adequately nor accurately understood without a comprehension of the culture of the organization" (p. 469). During the period of eighteen years (1986-2004) according to Farley (2004), a total of 144 articles were reported on the theme in the database of ABI/INFORM.

Nonetheless, the relationship between the concepts is not clear enough, since it has been studied differently by various researchers. For example, two kinds of investigations are apparent in the literature in order to hypothesize linkage between OC and OE. First form of studies argues about weak and strong culture in organizations and concludes that the strong culture is positively associated with effectiveness (Peters & Waterman, 1982; Deal & Kennedy, 1982). However, others claim that effectiveness of an organization is dependent upon dominant culture type.And, they view different culture types as alternative "governance modes" and so assert that some culture types are more congruent to effectiveness than that of others (Ouchi, 1980; Ogbonna & Harris, 2000; Wilkins & Ouchi, 1983). Additionally, the relationships between the concepts have been examined in different industries and so different indicators for effectiveness and OC were used. Further, some researchers used qualitative while other employed quantitative mechanisms in their studies. Also, in previous studies data for effectiveness were used in terms of cross sectional as well as longitudinal (e.g., Denison, 1984; Rousseau, 1990) and thereby lack of agreement is seen in results.

Albeit, for the purpose to generate hypotheses of the present study.And, due to relevancy of this study as of HEIs we focus on most revenant literature regarding these types of institutions. Therefore, omit the view of "strong and weak culture" in the favor of "dominant culture type". Since, in previous studies (Cameron & Freeman, 1991; Smart & John, 1996) revealed the different culture types appeared more significant in accounting for effectiveness than the strength of culture. Various studies of HEIs that implemented the test of significance procedures disclosed that institutions with a dominant clan or adhocracy culture types were more effective on most of the effectiveness indicators than that of hierarchy and market culture types (Cameron & Ettington, 1988; Cameron & Freeman, 1991; Clot & Fjortoft, 1998; Fjortoft & Smart, 1994; Smart & John, 1996). Similarly, Smart et al. (1997) by using test of associations reported clan and adhocracy as positive indicators, while hierarchy and market culture as inversely relationships to OE. Based on these pervious theories and empirical inquiries for this study we drive a main hypothesis with two sub hypotheses as follow:

H_1: Four traits of organization culture significantly predict OE.

H_{1a}: Clan and adhocracy culture types positively influence OE.

H_{1b}: Hierarchy/ bureaucratic and market culture types negatively influence OE.

2. METHODS

2.1 Sample and Sampling

All the 24 HEIs comprising 13 public and 11 private institutions of Khyber Pakhtunkhwa province of Pakistan were selected for examination. As the study is based on subjective measures so the participants of this study were full-time senior faculty members and administrators. The logic to choose these people is grounded on the fact that they are core constituencies and play an active role in policy, directions, performance and decision making activities (Fjortoft & Smart, 1994). Moreover, same kinds of individuals were selected in previous studies (e.g., Cameron & Freeman, 1991; Smart & Hamm, 1993; Smart & John, 1996). Since, there was no population frame available that could present a complete list of total elements of universe of HEIs in Khyber Pakhtunkhwa, Pakistan.Therefore, the most recent data was gathered in terms of number of elements with their email addresses from the web sites of respective institutions and aggregated by the researchers. Consequently, a total of 1995 elements were considered as potential respondents including 1543 (public=1192, private=351) senior faculty members and 452 administrators (public=324, private=128). Subsequently, a representative sample size (290) was determined by Cochran (1977, p. 77) formula for continuous data by using pilot study statistics and according to recommendation of Bartlett et al. (2001) a narrow margin of error (0.1) was taken. Furthermore, a most efficient probability sampling technique in the shape of "disproportionate stratified random sampling" was used to offer proper representation to each group of the study, because, in terms of numbers a considerable variation was present in each stratum (e.g., Sekaran, 2003). However, later on a sample of subjects from each stratum was drawn using simple random sampling procedure.

2.2 Data Collection Procedure

Prior to the main phase of data collection first a survey pilot study (37 respondents) was conducted aiming to determine the sample size for the study, functionality of the web-based survey, participants' understanding of the survey items and to estimate the psychometric properties of the survey instrument. Following in confirming properties thereof, in the main phase initially the data was collected by web based e-mail questionnaire by employing software "email questionnaire version 4.14". Due to anticipated response rate for web based survey from the previous studies (e.g., Klassen & Jacobs, 2001), a total of 630 questionnaires were sent with a letter explaining the purpose of the research and instructions for filling web survey to respondents' respective e-mail addresses that were taken from their relevant institutions. But, 42 did not deliver to their email addresses according to delivery status notification though a total of 588 questionnaires were successfully delivered. However, even two follow up letters returned only 196 questionnaires with 33 % response rate which did not meet the requirement of the study sample size. Therefore, to fulfill the remaining number for sample size a paper and pen questionnaire method was adopted and personally distributed with the help of students of different HEIs. By this method a total of 300 questionnaires were distributed and resultantly 158 questionnaires with 53 % response rate were received by researchers.

In summary, both of the devices applied i.e., internet based as well as paper and pen surveys captured a total of 354 positive replies with overall 38 % response rate in the form of filled questionnaires. But, 52 questionnaires were identified as invalid in preliminary data analyses, whereas 302 were useable.And, hence meet the requirement of the sample size and used for further analyses. Additionally, the number of subjects per institution ranged from a minimum eight to maximum twenty one with an average of 12.37 respondents per institution. Further, about 70 percent of the institutions had 10 or more respondents.

2.3 Instrument

The survey instrument of this study can be divided into two major sections. Part one was intended to measure the dependent variable i.e., organizational effectiveness,whereas, second portion was designed to tape the independents variable i.e., organizational culture. To capture the complete meaning of OE a total of seventeen diverse attributes were taken comprising the eight dimensions of operationalized version of competing values model by Rohrbaugh (1981) followed as general. Moreover, nine components in special reference to HEIs developed by Cameron (1978, 1986) adopted as particular. All of the seventeen dimensions of OE composed of 72 items were measured on 5 points interval scale (Likert). Next, the independent variable i.e., organizational culturewas measured by popular scale of Cameron and Ettington (1988) and Cameron and Quinn (2006) which is labeled as Organizational Culture Assessment Instrument (OCAI). It consists of a total of sixteen questions that address heterogeneous elements of organization culture. Four questions each were asked to measure four components of organization culture i.e., "Institutional Characteristics, Institutional Leader, Institutional Glue and Institutional Emphases Items". And, these four components actually identify four types of OC. Each item of a component represents a different type of OC and composition of four items one from each component classify a culture type. For instance, from the Appendix B item Nos. 1,5,9,13; 2,6,10,14; 3,7,11,15; 4,8,12,16 represent respectively, clan, adhocracy, bureaucratic/ hierarchy and market culture types. The score for every participant on all of the four culture scales was acquired by mean of their ratings for each culture type across the four dimensions.

Instead of Likert scale to measure organization

culturea fixed or constant sum scale as originally used by their developers was employed. However, respondents were asked to allocate 0-10 points rather than 0-100 points as originally used. It was explained to respondents that if a statement is very similar to the context of their institution assign highest value (10) and when a statement does not match at all to their institution then put up a (0) value, and if a statement was as important as some other, it was counseled to allocate twice as many points. However, total of all four statements were asked to sum up as 10. This scale is considered as ratio in the current study since it has an absolute zero, 4 points are twice as many as 8 and has equal distance between the any two points, for example, difference between points 1-3 is same as difference between points 7-9 (Malhotra & Dash, 2009).

2.4 Analysis and Results

Once the surveys returned, data were keyed into a software package SPSS version 17.0. Further, before the final data analysis to test the research hypotheses a pre-data analysis was performed in terms of z score standardization for the purpose to transform different scales (likert and constant sum) into a single standard scale. Moreover, psychometric properties of the instrument were estimated by using Cronbach's alpha (α) for reliability and a principal component solution with a varimax rotation method applied to each of four quadrant factors of CVF as well as OCAI separately to test convergent validity. Consequently, all coefficient alpha values for each scale ranged from 0.77 to 0.91 and are above the standard cutoff criteria i.e., 0.70 (Sekaran, 2003) which is evidential of sound reliability of the instrument. Furthermore, the factor analysis verified the convergent validity of the scale because almost all the items of a particular scale loaded onto their respective components with exception of few items of Rohrbaugh (1981) loaded onto human relations quadrant of CVF instead of internal process quadrant. Moreover, the factor loadings for most of the items were greater than 0.71 which deemed as excellent for factor analysis procedure (Comrey, 1973) and therefore, substantiate the validity of instrument used in this study. The factor loadings and scores of Cronbach alpha are exhibited in the appendixes at the end of the article.

Finally, in order to test study hypotheses a standard multiple regression was executed at 99% confidence level (α = .01). Tables1- 3, report the basic outcomes for standard multiple regression. Referring to Table 1 providing model summary shows the multiple correlation between the predictors and the outcome i.e., R (.664[a]). The value of R Square (.442) indicates that 44.2 % of the variance was explained in OE due to OC.

Table 1
Model Summary[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.664[a]	.442	.434

a. Predictors: (Constant), Market Culture, Bureaucratic Culture, Adhocracy Culture, Clan Culture
b. Dependent Variable: Organizational Effectiveness

The next Table 2 indicates the overall results for the regression model labeled as ANOVA. From this table, the p value (.000) corresponding to the F-statistic is less than the cut-off criteria ($p < .01$) to reject the hypothesis. It allows us to infer that there is sufficient evidence existed to reject the null hypothesis in favor of the study main hypothesis that the four types of OC significantly explain the variance in perceived OE.

Table 2
ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17.825	4	4.456	58.709	.000a
	Residual	22.543	297	.076		
	Total	40.368	301			

a. Predictors: (Constant), Market Culture, Bureaucratic Culture, Adhocracy Culture, Clan Culture
b. Dependent Variable: Organizational Effectiveness

In addition, for the purpose to compare the influence of each predictor variable on the dependent variable, Table 3 shows (β) i.e., standardized regression coefficient of each of the predictors. The clan, adhocracy, bureaucratic and market culture generated the some degree of contribution in positive or negative direction to OE. Controlling for other predictor variables, the amount of change in OE associated with a given change in clan, adhocracy, bureaucratic and market culture were ($\beta = .432$, $p < .001$), ($\beta = .345$, $p < .001$), ($\beta = -.249$, $p < .001$), and ($\beta = -.062$, $p > .10$) respectively. This information of beta scores substantiates our first sub hypothesis that clan and adhocracy culture types positively influence OE. However, second sub hypothesis partially supported such that bureaucratic culture significantly inversely impacts on OE, while remaining part of this hypothesis in terms of market culture type did not validate in the present study.

Table 3
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.106	.081		38.121	.000		
	Clan Culture	.111	.016	.432	6.785	.000	.464	2.156
	Adhocracy Culture	.073	.010	.345	7.558	.000	.904	1.107
	Bureaucratic Culture	-.078	.020	-.249	-3.935	.000	.468	2.137
	Market Culture -.016	.012	-.062	-1.385	.167	.950	1.053	

a. Dependent Variable: Organizational Effectiveness

2.4.1 Assumptions and Aptness of the Regression Model

There are number of assumptions stated by different statisticians for linear multiple regression model (e.g., Field, 2005; Giventer, 2008; Levine,Krehbiel, & Berenson, 2005; Tabachnick & Fidell, 2007) described in table 4 and are satisfied in this study.

Table 4
Assumptions of Multiple Linear Regression

Assumptions	Brief Explanation
1. Variable Types	All predictor and outcome variables must be quantitative
2. Independence	Each value of the outcome variable comes from a separate entity
3. Sample Size	Should be good enough
4. Multicollinearity	Predictor variables should not be highly correlated
5. Independence of error	No autocorrelation effect
6. Outliers	Standardized residual values should not be above 3.3 or less than -3.3
7. Normality of errors	The residuals should be normally distributed about the predicted DV scores
8. Homoscedasticity	The variance of the residual terms should be constant)
9. Linearity	No curvilinear effect

For example, first two assumptions are fulfilled since both of predictors and outcome variables are continuous and all the subjects were independent. Since all the 24 HEIs were taken to examine, moreover, probability sampling design with a narrow margin of error for determining sample size of the study offer a reasonable and representative sample of subjects which satisfy the third assumption. In resolving the assumption No. 4, the collinearity statistics are determined and given in the last column of Table 3. The Variance Inflation Factor (VIF) and Tolerance are not violating the cutoff values 5 and 0.1 respectively (e.g., Field, 2005). Therefore, this assumption is also attained. The next assumption i.e., independence of error is not relevant to our model, because this study is based on cross sectional data rather than time-series.

All the rest of assumptions are verified by residuals analyses. For example, to detect the outliers, first a case wise diagnostics was executed. But, no case identified that would have standardized residual values above 3.0 or below -3.0. Moreover, for the purpose to report, according to the suggestion of Field (2005) the Mahalanobis Distance was determined to check the outliers and to examine whether any strange case is having any undue influence on the outcomes for our model as a whole.In this regard Cook's distance was examined and given in the last two rows of the Residuals Statistics Table 5. To pinpoint that which cases are outliers, the critical chi-square values are presented in Table 6 (Pearson & Hartley, 1958, as cited in Pallant, 2007). The critical value Mahalanobis Distance for four predictors is 18.47 according to the Table 6, which is less than the maximum Mahal. Distance (16.798) of our model reported in the Table 5. Furthermore, Cook's distance from Table 5 which is (0.43) also lower than that of the cutoff point 1 for any of the influential case on the model (Field, 2005). This information of value Mahalanobis as well as Cook's distances confirms not only the absence of outliers, but also advocates no influential case was found in our model.

Table 5
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.8998	3.9095	3.4446	.24335	302
Std. Predicted Value	-2.239	1.910	.000	1.000	302
Standard Error of Predicted Value	.020	.067	.034	.008	302
Adjusted Predicted Value	2.8965	3.9133	3.4446	.24365	302
Residual	-.73270	.66761	.00000	.27367	302
Std. Residual	-2.659	2.423	.000	.993	302
Stud. Residual	-2.677	2.443	.000	1.001	302
Deleted Residual	-.74261	.67836	.00000	.27791	302
Stud. Deleted Residual	-2.706	2.463	-.001	1.004	302
Mahal. Distance	.577	16.798	3.987	2.595	302
Cook's Distance	.000	.043	.003	.005	302

a. Dependent Variable: Organizational Effectiveness

Table 6
Critical Values for Evaluating Mahalanobis Distance Values

Number of Indep. Variables	Critical Value	Number of Indep. Variables	Critical Value	Number of Indep. Variables	Critical Value
2	13.82	4	18.47	6	22.46
3	16.275	20.52	7	24.32	

Source: Pearson, E,S.and Hartley (1958)

The assumption of the Normality of errors was verified by checking a Normal Probability Plot (P-P) of the Regression Standardized Residual as recommended by Pallant (2007). This graph of our model is depicted in Figure 2, as the plot is adjacent to a straight line which endorses the assumption of normality of errors (Mendenhall & Sincich, 1993).

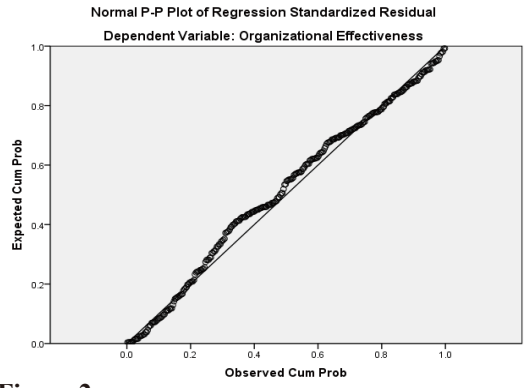
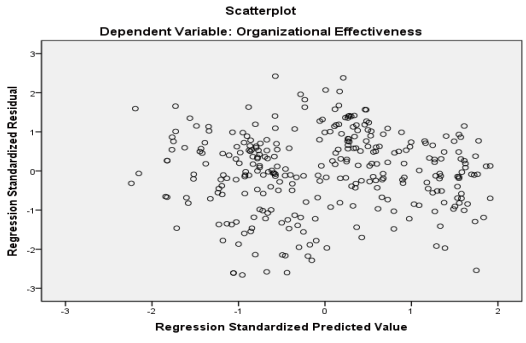


Figure 2



The assumptions of homoscedasticity and linearity were assessed by the plot of standardized residuals against standardized predicted values according to the recommendations of Field (2005). According to this plot from the Figure 3 it can be realized that the points are randomly and evenly spread throughout the scattered diagram and no evidence of funnel like shape of points or higher on one side than the other is observed, so no heteroscedasticity in the data is confirmed. Therefore, no violation of homoscedasticity assumption is noticed in our model. Additionally, the assumption of linearity is also met from the Figure 3, since no pattern or curvilinear effect is seen between standardized residuals and standardized predicted points.

3. DISCUSSIONS AND IMPLICATIONS

Attempts to illustrate the effects of OC traits on OE continue. The current study adds to this emergent research torrent by scrutinizing the impacts of Cameron and Quinn's (2006) four key OC types, clan, adhocracy, hierarchy and market on OE. Since, the study was carried out in HEIsof the province of Khyber Pakhtunkhwa, Pakistan. It furnishes evidence in respect to higher education sector in developing country context which is structurally analogous to developed and western settings, though, culturally very different whatever the studies published so far.

However, surprisingly results of the present study did not disparate much from the developed and western circumstances. The outcomes of the multiple regression analysis confirmed that overall four traits of OC considerably explains the variance in perceived OE (our

first hypothesis) which can be interpreted that at least one or more of the predictor independent variables i.e., types of OC assist to account for the variation in the criterion (dependent) variable i.e., organizational effectiveness. It supports the view of theorists that effectiveness of an organization is dependent upon dominant culture type and they view different culture types as alternative "governance modes" and so assert that some culture types are more congruent to effectiveness than that of others (Ouchi, 1980; Ogbonna & Harris, 2000; Wilkins & Ouchi, 1983). Moreover, results of the study were mostly consistent with respect to clan, adhocracy and hierarchy type of cultures to the findings of previous research with special relevance to HEIs (Cameron & Freeman, 1991; Smart & Hamm, 1993; Smart et al., 1997), howbeit anomaly observed for market culture trait. For instance, the clan type of culture indicated as one of the best in relation to OE followed by adhocracy as in conjunction with theory (Ouchi, 1980) and substantiated in earlier empirical studies stated above.

Similarly, the study finding about bureaucratic culture is in line with prior research pertaining to HEIs (Lejeune & Vas, 2009; Smart et al., 1997) as denoted inverse relationship to OE. Conversely, past several researchers when employed Denison's model to diagnose organization culturethat is very similar to CVF in different other industries such as insurance, manufacturing,health and business unit revealed a positive association between bureaucratic culture trait and OE in these type of organizations (e.g., Kim et al., 2011; Gregory, Harris, Armenakis, & Shook, 2009; Yilmaz, & Ergun, 2008; Xenikou & Simosi, 2006). However, it is clear in this study as well as former studies that in HEIs context OE and bureaucratic sort of culture are negatively related or no significant differences were observed on any of OE dimensions with bureaucratic culture (Cameron & Freeman, 1991; Smart & John, 1996; Smart et al., 1997). It is argued that HEIs composed of an environment of high learned people who want to break the precedents with their creative and innovative views whereas rigid rules and control of bureaucratic culture resist in their way, moreover, as it is empirically identified that in bureaucratic culture leaders adapt autocratic/political decision making approaches instead of rational/collegial (Smart et al., 1997) cause dissatisfaction and turnover. But, inasmuch these learned people are the transformation machines in the settings of HEIs and their dissatisfaction and turnover adversely impact on most of the OEattributes and specially outputs could not be attained or substandard products in terms of graduates are generated. According to Smart and John (1996) commenting on the internal focus of the organization i.e., clan and bureaucratic types (see Figure 1) that it offers an exciting view on the historic dilemma between those who affirm that HEIs are communities of scholars (e.g., Goodman, 1962; Hook, 1970) and those who keep more Weberian stance of institutional operations (e.g., Corson, 1960). Nonetheless, empirically latter view did not support in HEIssettings in prior research in western end as well as in this study of developing country side relative to former view i.e., clan trait.

Finally, the result of this study in terms of market culture type to OE descriptively showed slightly negative association, but it appeared statistically insignificant. In early few studies in HEIs context revealed mix findings for example in the study of Smart et al. (1997) a clear significant inverse relationship was found by regression analysis. A more recent study of Lejeune and Vas (2009) using a different statistical technique (correlation analysis) exhibited statistically significant positive association with two of nine dimensions of Cameron model (1978) for OE, while all other descriptively indicated as positive except a sole. The outcome of this study regarding market culture lie between these two studies, however, based on the findings of this study we are not in the position to infer this relationship to our target population and so this culture trait has vague relationship with OEin the domain of Khyber Pakhtunkhwa, Pakistan. We propose further research with more respondents from large sample size of institutions at entire Pakistan level may lead this relationship to either statistically significant in negative or positive direction.

The findings of this study serve interesting and valuable insights for practicing leaders and administrators in the context of HEIs in the province of Khyber Pakhtunkhwa, Pakistan. Foremost, it introduces diagnostic framework of competing values to measure the organization cultureand OE on behalf of subjective measures that are proven as having sound psychometric properties in this study and in various other inquiries in different cultures as well. Moreover, it suggests that to promote OE, knowledge and understanding of OC has paramount importance. Since, simultaneously the institutions exercise one or more types of culture that even contradict to each other, therefore leaders/ administrators and owners must be reactive to the assortment of cultures that occur in their institutions. Commenting on this issue Peters and Waterman (1982) states that "the excellent companies have learned to manage paradoxes" (p.100). For example, it has been a long historical debate that whether to focus on organizational internal side (humanistic approach), external (mechanistic approach) or both are essential. And, the dilemma of organizational structure preferences have been resided in the literature that if emphasis on stability and control or flexibility should be taken for good performance of an organization. The findings of this study clearly address to manage the dilemma of paradoxes in organization in such a way that both views of internal and external with conjunction of flexibility focus are important for effectiveness of an organization. Since, both clan and adhocracy culture types indicated significant positive connection to OE. Furthermore, we suggest if

an institution faces problems in internal side that should intake the properties of clan culture type and exhale the attributes of bureaucratic type of culture. Similarly, when problems are observed in external side it is proposed to move towards the characteristics of adhocracy culture type by skipping the market culture to enhance the effectiveness of an organization.

But who and how OC is changed from one trait to another? Answer of this question is given by the contention of Schein (1992) that "culture and leadership ... are two sides of the same coin" and asserts that "the only thing of real importance that leaders do is to create and manage culture" (p. 1). He further proposes that particular behaviors of leaders communicate culture and transmit new cultural directions. For example, he recommends that organization culturemay be generated and inclined through such explicit behaviors as "what leaders pay attention to on a regular basis, how leaders react to critical incidents, what criteria leaders use to allocate resources, and the qualities of individuals who are recruited by and promoted in the organization" (as cited in Smart &Jhon, 1996, p.444).

4. LIMITATIONS AND FUTURE PERSPECTIVES

Next to the contributions, there are some possible limitations of this study which call for certain cautions in interpretation of its findings. First, as the data were collected from the province of Khyber Pakhtunkhwa, Pakistan in HEIs, therefore generalizability of these findings to country level or to other type of enterprises needs to be tested empirically. Second, this study employed a multiple regression procedure for direct effect of the predictors onto response variable, yet, no causal relations were examined, and so ascriptions of causality cannot be made.

We offer some angles for future research. First of all, same type of study is needed with larger sample of institutions at all over the Pakistan level so that the relationship that this study did not reveal significant can be drawn clear. Further, this study was based on subjective measures, it is recommended for objective measures in taping OE and results are compared for similarities and differences. Moreover, Future research is needed that uses longitudinal designs and time-lagged correlations to more adequately address the issue of causality, since this study did not generate the cause and effect relationships. In addition, this study employed the viewpoint of culture types instead of strong and weak cultures, we propose future researcher could be focus on the both views with relation to OE in the context of developing country and comparison should be made. In addition, other variables, like, leadership and managerial strategies may mediate the relationship of organization culture and OE and, therefore, could be considered in future research.

CONCLUSION

This study was intended to empirically examine the influence of OC on OE. Based on the results of the study hypotheses above, we conclude OC as a significant predictor of OE. Moreover, we found clan followed by adhocracy traits of OC as most important in comparison to market and bureaucratic types of OC in explaining OE. This implies that if an institution is able to nourish clan or adhocracy culture, it can enhance its effectiveness and vice versa if it nurtures bureaucratic culture.However, we could not make inferences in terms of market culture according to the findings of this study.

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Appendix A

Factor Loadings and Cronbach Alpha Scores of OE Assessment Instrument

Questionnaire Items, Human-Relations Model	Cohesive Workforce	Skilled Workforce	Student Education Satisfaction	Faculty Employment Satisfaction
1. There is an atmosphere of friendship at work.	.822			
2. Employees seem to get along well with each other.	.839			
3. Employees trust each other.	.817			
4. There are significant conflicts among employees.	.817			
5. There are significant conflicts between the center and departments.	.653			
6. Employees possess skills adequate to their assignments.		.691		
7. Members of the staff are well qualified for their jobs.		.791		
8. Staff members have the capacity to do their work.		.778		
9. In this office it seems to matter if I do a good job.		.806		
10. Outsiders respect the quality of our work.		.832		
11. Students enjoy their school life.			.853	
12. Students maintain a good relationship with faculties.			.834	
13. Students are highly satisfied with their programs of study.			.834	
14. There is a high student drop-out rate.			.797	
15. Faculties enjoy teaching.				.796
16. Faculties enjoy conducting research.				.820
17. Employees are satisfied with their working environment.				.782
18. My university is a good employer.				.751
Cronbach's Alpha (α)	.853	.854	.871	.815

Questionnaire Items,Open-Systems Model	Flexibility	Resource Acquisitions	Quality of Resource Acquisitions	Faculty Employment Satisfaction
19. In a crisis Employees are usually able to get their work done.	.793			
20. Employees are flexible enough to take on new tasks.	.835			
21. Management's responses to emergencies are usually adequate.	.846			
22. Management adapts well to new demands on our organization.	.839			
23. When change is required, this organization adjusts accordingly.	.830			
24. The size of our institution is steadily increasing.		.794		
25. Each year we have a larger staff than the year before.		.839		
26. In terms of the number of personnel, our organization has not been growing recently.		.844		
27. We keep hiring new employees to fill new positions.		.811		
28. Our institution can attract the best student applicants acquire.			.836	
29. Our institution can attract and retain good quality staff.			.831	
30. Our institution outperforms than other competitor universities in securing research funds.			.837	
31. Our institution outperforms than other local universities in securing financial sponsorships from industry.			.797	.773
32. Faculties are active in various community services.				
33. We emphasis on meeting the needs of employers.				.791
34. Faculties enjoy a good reputation with the general public.				.803
35. We maintain a good link with industry and other higher education institutions.				.796
Cronbach's Alpha (α)	.876		.832	.795