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# THE MEDIATOR ROLE OF ORGANIZATIONAL INNOVATIVENESS BETWEEN ORGANIZATIONAL CULTURE AND ORGANIZATIONAL EFFECTIVENESS

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**ABSTRACT:** *Organizational culture and organizational innovativeness are viewed as important factors for improving the organizational effectiveness in institutions of higher education. The aim of this study was to examine the correlations among organizational culture, organizational innovativeness and organizational effectiveness. Moreover, the mediating role of organizational innovativeness between organizational culture and organizational effectiveness was studied.The method used in the study was survey research. Based on the cluster sampling method, all full time faculty members from five branches of Islamic Azad University (IAU), Pars Province, Iran, were included in the sample of the study. The number of respondents was 369 participants. For measuring variables, three questionnaires were employed. The findings indicated that the adhocracy culture, market culture and clan culture were found to have significant positive correlations with organizational innovativeness and organizational effectiveness. However, hierarchy culture showed no significant relationship with either organizational innovativeness or organizational effectiveness. Additionally, organizational innovativeness partially mediated the relationships among clan, adhocracy and market cultures with organizational effectiveness.Therefore, organizational culture not only directly influences both innovativeness and effectiveness but also influences effectiveness through innovation. The university administrators should be aware of the benefits from the implementation of a culture that supports innovation in order to assure the effectiveness of universities.*

**KEYWORDS:** Adhocracy culture, Market culture, Clan culture, Hierarchy Culture, Innovation, Iran

## INTRODUCTION

Quality assessment in higher education is both a national and a global concern for academic leaders (O'Brien, 2009). Over the past decade, challenges and demands for higher education



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institutions to demonstrate institutional effectiveness and accountability from the government as well as the nongovernment sectors have steadily increased (Behr & Walker, 2009; Middaugh, 2009).

Based on literature, it was found that the type of organizational culture has a significant association with organizational effectiveness (Anderson, 2000; Dela Cruz, 2011; Lejeune & vas, 2009). A few studies explored variables that moderated or mediated the relationship between organizational culture and organizational performance. For example communication (Garnett et al., 2008), Leadership (Chen, 2004), and human resource-related performance (Ngo & Loi, 2008).

There are researches concerning the link between organizational culture and organizational innovativeness (Bratianu & Vasilache, 2009; Duréndez & Garcia, 2008; Obenchain, Johnson, & Dion's, 2004). A number of researchers have demonstrated that there is a positive relationship between organizational innovativeness and organizational effectiveness. (Gopalakrishnan, 2000; Lin, 2006; Tajeddini, 2011; Wang, 2005). A few studies support the important role of organizational innovativeness as a partial mediator between environmental and organizational variables and organizational performance (Vincent, Bharadwaj and Challagalla, 2004).

Considering above points, there is a lack of understanding surrounding the relationship between the organizational culture, organizational innovativeness, and organizational effectiveness. Moreover, these relationships have yet to be empirically investigated together. In the current study, the gap in the literature leading to the study on whether organizational innovativeness has a mediating effect on relationship between organizational culture and organizational effectiveness? By addressing this concern, via the proposed objective, this investigation provides more insight to the organizational culture and organizational effectiveness literature.

## ORGANIZATIONAL CULTURE

Cameron and Quinn (2006) defined organizational culture as some valuable notions such as the language and symbols, the dominant leadership styles, the definition of success, the procedures, and routines that make an organization unique. In this study, organizational culture refers to the perceptions held by university teaching staff as regards their organizational context. It is conceived of four culture types: clan, adhocracy, hierarchy, and market. The focus of attention of clan is the inside maintenance with flexibility, attention and sensitivity to customers and people. Adhocracy stresses external focus with a high degree of individuality and flexibility. Hierarchy culture emphasizes the internal maintenance requiring control and stability. Finally, the market culture concentrates on outside positioning requiring control and stability.



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## ORGANIZATIONAL INNOVATIVENESS

According to West and Farr (1990), the organizational innovativeness is the deliberate use of procedures, products, processes and ideas inside a group or organization to the intended unit of adoption which is supposed to be significantly beneficial for the person or group or any other bigger organizations. In the present study, the organizational innovativeness is defined as the frequency of times each type of innovation (technical and administrative) is actually implemented in the organization during the past 3-year-long period. Administrative innovation in this study refers to the implementation of a structure, procedure, system, or process in the administrative core of an organization that is new to the prevailing organizational practices. On the other hand, technical innovation is defined as the implementation of a service, program, or product that is new to the prevailing organizational practice.

## ORGANIZATIONAL EFFECTIVENESS

Organizational effectiveness can be defined as capability of an institution in reaching its set aims and the individual objectives together with the final goals of the organization (Slack, 1997). A unit which is individually ineffective in terms of cooperation with the rest of the organization is doomed to failure (Gigliotti, 1987). Organizational effectiveness is defined as the faculty member's perception of the nine dimensions of organizational effectiveness to describe the current situation of their university. Based on Cameron's (1978) model these dimensions are:

1. Student educational satisfaction: This criterion shows how much students are happy with their academic progress and experiences.
2. Student academic development: This criterion shows the extent to which students grow and attain academic achievements.
3. Student career development: This criterion determines how much students make progress in their jobs with a special attention to their work progress and the opportunities they are given by the university.
4. Student personal development: This criterion indicates how much a student's social, emotional and cultural aspects develop and to what extent the institution plays a role in this development.
5. Faculty satisfaction with employment: This criterion determines to what extent administrators and the members of the faculty are satisfied with their jobs at the university.
6. Faculty quality and occupational progress: This criterion shows how much a faculty develops and to what degree occupational quality is achieved in addition to the institution's contribution to this purpose.
7. System community interaction and openness: This criterion indicates the significance of interaction with, service in and adaptation to the external settings.
8. Capability in obtaining resources: This criterion deals with the institutions' capability in obtaining resources from outside; the sources can include the faculty and good students, financial support and so on.



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9. Organizational health: This criterion shows viability, vitality, and benevolence in the processes and practices inside the institution.

## RESEARCH OBJECTIVES

This research pursues the following objectives:

1. To determine the relationship between organizational culture types, organizational innovativeness and organizational effectiveness in private universities as perceived by the faculty members.

2. To determine the mediation effects (if any) of organizational innovativeness between organizational culture types and organizational effectiveness in private universities as perceived by the faculty members.

## RESEARCH QUESTIONS

This study addresses two research question as follows:

1. What are the relationships among organizational culture types, organizational innovativeness, and organizational effectiveness in private universities as perceived by the faculty members?

2. Does organizational innovativeness mediate the relationship between organizational culture types and organizational effectiveness in private universities as perceived by the faculty members?

## LITERATURE REVIEW

### Relationship between Organizational Culture and Organizational Effectiveness

Researchers have investigated the relationship between organizational culture and organizational effectiveness in higher educational organizations. The results of a study by Anderson (2000) indicated that the four culture types (clan, adhocracy, hierarchy and market) were significantly related to the organizational effectiveness in the Tennessee Community Colleges. The associations were found to be strong ($p < .001$) and positive. It was also found that for the maximum performance on the nine dimensions, effective use of all four culture types in the appropriate circumstances is needed. Anderson (2000) suggested college members to obtain specific actions to learn how to use aspects of the four culture-types in order to achieve the maximum performance on the nine dimensions of effectiveness.

The findings of Kwan's research (2002) revealed that in Hong Kong universities, the "Group" and the "Developmental" cultural types are stronger predictors of organizational effectiveness than the "Hierarchal" and the "Rational" cultural types. Moreover, it was found that organizational effectiveness is positively related to both "Cultural strength" and "Cultural congruence" but negatively to "Cultural compliance". Furthermore, Kwan (2002) concluded



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that the effective organizations are those that can constantly adapt to the environment. Since the environment is ever-changing, as are organizations, the study of organizational effectiveness is expected to figure continually on the agenda of management and organization researchers.

In another study, Smart (2003) studied the relationship between organizational culture and organizational effectiveness of community colleges. To collect data, a survey method was administered among full-time faculty and administrators in a statewide system of 14 community colleges in the U.S.A. Based on Smart's suggestion, the most effective campus culture is one that reflects a healthy balance of the four culture types (adhocracy, clan, hierarchy, and market) rather than a focus on only one or two of these culture types. The importance of campus leaders in the management and change of campus cultures was another finding of Smart's study.

To examine the relationship between organizational culture and organizational effectiveness in residence hall associations, Faerman (2009) conducted a study using Cameron's instrument. The findings showed a significant relationship between the organizational culture and organizational effectiveness. A highly strong correlation was found between the clan ideal culture type and the three indicators of organizational effectiveness (housing relationship, RHA effects, and formal processes). However, the pervasiveness of clan culture which was found in these organizations served as a detriment to the employment of new personnel as well as the retention of those members who did not become immersed in the organization.

Lejeune and Vas (2009) investigated the perceived impact of an accreditation process on organizational effectiveness and culture in business schools. In this research 31 deans and directors general of European Quality Improvement System (EQUIS) were surveyed. The findings showed that adhocracy and market cultural types were strongly correlated to effectiveness. Bureaucracy was not associated with any of Cameron's nine dimensions of organizational effectiveness. Lejeune and Vas (2009) concluded that dimensions of organizational culture and effectiveness are at the heart of organizational identity. Values and perceptions of effectiveness are indeed strong vectors of identity.

Dela Cruz (2011) examined the roles of organizational culture, management strategy, and decision-making process on institutional effectiveness. The participants were full-time tenured and tenure-track faculty members at a four-year public higher education institution in South/Central Texas, the Blue University. In addition, the results showed that market culture was the best predictor of institutional effectiveness while adhocracy, bureaucracy, and clan cultures were the least effective predictors of institutional effectiveness. Overall, the study suggested that faculty support, consensus, and participation are necessary in institutionally effective activities and initiatives to improve organizational performance.



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**Relationship between Organizational Culture and Organizational Innovativeness**

Obenchain (2002) explored the association of organizational culture type, and size with organizational innovation in higher educational centers. The findings indicated that the technical innovation was used at higher frequency than the innovation in the administrative part by institutions. Particularly, the most frequently occurring innovation created entirely new programs and services. It was also found that most of the higher educational institutions represent a superior culture type of clan. A statistically significant difference was also reported between the mean scores on administrative and technical innovation based on the cultural types. Nevertheless, the dominant adhocracy culture was linked to the innovation at higher levels for two innovation types, namely administrative and technical. The prospect of implementing innovation in higher educational institutions is linked with culture type, especially the attributes of the adhocracy type.

Jaskyte (2002) examined the relationship between organizational culture and organizational innovation in non-profit offices. The findings indicated that greater types of values and ideas within the organization were linked to innovativeness at a top-level. It was also revealed that larger organizations inclined to behave more innovatively, and on the whole, they tended to show cultural consensus at lower levels. Jaskyte (2002) concluded organizations should be willing to be innovative, give enough flexibility to employees to express their creativity and to enable them to experiment, take risks, and take advantage of opportunities. Therefore, leaders should seek to introduce cultural changes in order for the organizations to be innovative.

Duygulu and Özeren (2009) in their research showed the effects of organizational culture and leadership styles on firm's innovativeness. The relevant data was collected through a survey instrument. The most significant finding of the study was that adhocracy culture was a common variable for all the firms in explaining innovativeness. Duygulu and Özeren's (2009) study showed a strong need for change in the organizational culture and leadership style of the firms toward adhocracy culture and change centered leadership.

Valencia, Valle, and Jiménez (2010) studied the relationship between organizational culture and product innovation. They found that organizational culture can enhance product innovation but that it can also inhibit it depending on the values that culture fosters. In particular, they found that product innovation is positively associated with adhocracy culture and has a negative relationship with hierarchical culture. They suggested that firms hoping to enhance product innovation should pay attention to their organizational culture. In particular, firms must make efforts to develop an adhocracy culture, which fosters creativity, entrepreneurship, openness, risk taking, etc. On the contrary, companies should try to avoid hierarchy culture, which emphasizes internal control, close adherence to regulations, and internal orientation.

In another study, Soltani, Damirchi and Darban (2011) explored how organizational culture can affect organizational innovation in Cultural Institutions. As their findings indicated, a rather low level of organizational innovation was observed in the institutions. Additionally, positive relationships were found between organizational culture and organizational



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innovation. Soltani *et al.*'s (2011) results indicated that the existing organizational environment was not suitable enough to improve organizational innovation at different levels of the institutions. Therefore, they recommended that structures and rules of these institutions be modified based upon an organizational culture supporting innovativeness.

**Relationship between Organizational Innovativeness and Organizational Effectiveness**

The findings of a study by Lin (2006) revealed that constructs like organizational learning culture, innovativeness, and absorptive capacity have direct or indirect effects on organizational effectiveness. It was also found that organizational learning culture plays an important role in enhancing the organizational absorptive capacity and innovativeness. Lin also reported that the influence of structural organicity on innovativeness is not as significant, and that both absorptive capacity and innovativeness are critical to organizational effectiveness.

Chen et al. (2009) in their research examined the links between organizational learning, innovation, and performance. Findings indicated that organizational performance was positively affected by administrative and technical innovation. They suggested that in order to get the opportunity and retain competitive advantage in rapidly changing environment, organizations must continue to learn and innovate. They should both enhance administrative and technical innovations. Then organizations can achieve better performance.

Damanpour et al. (2009) studied the combinative effects of three types of innovation (service, technological, and administrative) on organizational performance. Findings indicated that the positive effect of innovation on performance can be enhanced by the compositions of innovation types. They suggested that research in service organizations can be beneficial by focusing on breadth of innovation activity in multiple service areas, examining the dynamics of adoption of technological and non-technological innovations, as well as exploring the impact of adoption of different compositions of innovation types on organizational conduct and outcome.

The purpose of a study by Tajeddini (2011) was to examine potential influences of innovativeness on organizational effectiveness and efficiency. Regression analysis showed that innovativeness has a positive significant association with the overall organizational effectiveness. In other words, an innovative restaurant is able to yield greater effectiveness. Tajeddini (2011) suggested that marketing managers continuously be open to new ideas, processes, and products if they want to enhance their business performance.

Kasim and Noh (2012) in their survey using questionnaire argued that organizational innovativeness may have some influence on university performance. The participants were academic and management staffs of selected private universities. The key finding of this study suggests that activities of the organizational innovativeness had given a high positive effect on the university performance. In the end, they concluded that an innovation activity is an important path that the university can take to make it possible for the academic members and graduates to engage in innovative behavior.



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The present study differs from the reviewed body of research in that it looks into the relationship between organizational culture, organizational innovativeness and organizational effectiveness in higher education content in Iran. Approximately all the aforementioned studies utilizing different instruments from the questionnaires to be used in this study.

## METHODOLOGY

### Population and Sample

Based on its research objectives, this study follows a quantitative method in which the survey research technique is used. The population of the present study consisted of full-time faculty members of Islamic Azad University (IAU), who were working in Pars Province in Iran. The total population, based on a report by the Central Office of IAU in 2011-2012 academic years was 2034 full time faculty members. The one-stage cluster sampling was conducted through the steps as below.

1. Definition of IAU branches within the Pars province.
2. Determination the number of faculty members within each IAU branch.
3. Selection the IAU branches randomly to be sampled.
4. Participation the all full time faculty members within each selected IAU branch to be surveyed.

Therefore, the five branches were selected among 24 branches of IAU within Pars Province by simple random sampling. Then, all 485 full time faculty members within these five branches were included in the survey. The respondents received the questionnaires in person without being imposed any specific direction in their colleges, classes and offices. The actual size of the respondents who completed the questionnaire comprised 369 faculty members (Response rate= 76%) consistent with the sample size proposed by Cochran formula.

### Instrumentation

The questionnaire of the current study includes two sections: first, the socio-demographic characteristics of the respondents; second, a 122 item questionnaire including three separate instruments to measure organizational culture, organizational innovativeness, and organizational effectiveness.

### Organizational Culture Questionnaire

In the current study a Persian version of OCAI was used to examine organizational culture in IAU in Iran. The English version of OCAI was initially developed by Cameron and Quinn (2006). This instrument can measure six dimensions of the organizational culture. These dimensions are organizational leadership, organization glue, strategic emphases, management of employees, dominant characteristics, and criteria of success which measure participants' perception towards the principles under which the organization is run. The respondents were



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supposed to answer 24 questions related to the six dimensions. OCAI follows a five-point Likert scale ranging between 'strongly disagree' and 'strongly agree'. One of the four questions within each dimension was related to one of the four desired culture types (Clan, Adhocracy, Market, and Hierarchy). The organizational culture score for each participant was obtained through the mean of the six scores which were related to the ideal culture type. This mean score would indicate the respondents' perception of organizational culture.

**Organizational Innovativeness Questionnaire**

In this study, all seven items of Obenchain's (2002) questionnaire were employed to assess the organizational innovativeness. The items asked the faculty members to decide how many times they had experienced each innovation type in the last three years at their universities. In the original questionnaire, for each item there was a numeric scale ranging from 1 to 10 showing the frequency of such experiences. However, since it is difficult to remember the exact number of innovations experienced by the participants during the past three years, in the current study, the numeric scale was converted to a Likert scale from 1 (rarely) to 5 (very frequently), based on a discussion with some experts. In addition, 8 out of 14 questions from Jaskyte's research (2002) were added after they were modified to Likert scale. She evaluated organizational innovativeness in a group of nonprofit organizations using interview questions. In order to increase the relevance of the questionnaire, two other items were added based on Bordia et al. (2005) paper. This resulted in a 17-item questionnaire that was used as research tool for measuring organizational innovativeness in the current study.

**Organizational Effectiveness Questionnaire**

In this study, a questionnaire was improved by the researcher based on literature review (e.g. Allen, 2011; Betebenner & Linn, 2010; Bilimoria et al., 2006; Cameron, 1978; Collins & Apple, 2000; Cornell University, 2010; Friedman, 2005; Gill et al., 2010; Kim et al., 2010; Kwan & Walker, 2003; Lejeune & Vas, 2009; Mavondo, Tsarenko, & Gabbott, 2004; Mit career development handbook, 2011; OECD, 2005; Prevatt, Welles, Festa-Dreher, Yelland, & Lee, 2011; Ramirez, 2011; Russo & Fouts, 1997; Smith et al., 2009; Williamson et al., 1949).

Cameron (1978) provided a model to measure nine dimensions of organizational effectiveness in the institutes of higher education. The dimensions are (1) student educational satisfaction, (2) student academic development, (3) student professional development, (4) student personal development, (5) faculty and administrator employment satisfaction, (6) professional development and quality of the faculty, (7) system openness and community interaction, (8) ability to acquire resources, and (9) organizational health.

In the present study, after reviewing the related literature, the 87 items was classified in the nine dimensions of organizational effectiveness based on Cameron's model (1978) as the initial version. The questionnaire was a five – point Likert style from 1 (strongly disagree) to 5 (strongly agree). After it had been developed, the questionnaire was delivered to three experts from University Putra Malaysia and some experts from Iran to be consulted on its adequacy.



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The comments provided by these experts helped improve the quality of the instrument. The experts indicated the items that were important or unimportant for measuring every dimension. They reworded the items if they considered them unclear. They also added any comments on each dimension. Finally, an 81- item questionnaire was developed to determine the organizational effectiveness.

**Validity and Reliability**

The face validity and content validity of the research instrument was checked in a pilot study. The reliability of the questionnaire was measured by alpha Cronbach in the IAU context, through several stages:

- First, the researchers collected comments from three experts from University Putra Malaysia about the face validity and content validity of the English version of the instrument.
- Second, the English questionnaire was translated in to Persian by two professional bilingual translators independently. The translators were familiar with the linguistic and cultural backgrounds in both cultures, were acquainted with the subject matter of the research, and could translate the text into their native language based on Adler's (1983) guidelines.
- Third, after the confirmation of face and content validity of the Persian version of the questionnaire by some Iranian experts, and having received permission from the authorities to make use of the research questionnaire, the researcher personally delivered the instrument to 60 IAU faculty members in Pars Province. The respondents were invited to complete the questionnaire, to pinpoint those items that were difficult to interpret, and to provide suggestions on the wording and phrasing of the items.
- Fourth, a total of 54 sets of questionnaires returned. Four sets were incomplete. Cronbach's Alpha was calculated to measure the internal consistency of the instrument based on the 50 responses. According to the feedback received from participants, some wording modified in the final instrument.

As indicated in Table 1, Cronbach's alpha coefficients are listed for each cultural type in their respective column. All the cultural types have coefficient values above 0.70 that are acceptable, according to George and Mallery's (2003) rules of thumb. Once more, the results of this study provide support for Cameron and Quinn's (2006) assertion that the OCAI is a reliable instrument that measures culture types consistently.

| Subscale | Number of items | Cronbach's Alpha |
|---|---|---|
| Clan culture | 6 | .715 |
| Adhocracy culture | 6 | .775 |
| Market culture | 6 | .763 |
| Hierarchy culture | 6 | .750 |
| Total items | 24 | |

**Table 1. Reliability Estimates for the Organizational Culture Types from the Pilot Test (N=50)**



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Moreover, the reliability analysis of the organizational innovativeness results indicated a good internal consistency of .864. Similarly, the coefficients for the technical innovation (.774) and administrative innovation (.748) results indicate acceptable internal consistency according to George and Mallery's (2003) rules of thumb for Likert-type scales. Table 2 shows the reliability estimates for the organizational innovativeness scale from the pilot test.

| Subscale | Number of items | Cronbach's Alpha |
|---|---|---|
| Technical innovation | 9 | .774 |
| Administration innovation | 8 | .748 |
| Organizational innovativeness | 17 | .864 |

**Table 2. Reliability Estimates for the Organizational Innovativeness Construct from the Pilot Test (N=50)**

The alpha for overall organizational effectiveness was .958, which indicates excellent internal consistency of the instrument. Similarly, the alpha for the nine dimensions indicates the internal consistency from acceptable (.722) to excellent (.907) based on George and Mallery's (2003) guiding principle. The results are shown in Table 3.

| Subscale | Number of items | Cronbach's Alpha |
|---|---|---|
| Student educational satisfaction | 8 | .830 |
| Student academic development | 8 | .860 |
| Student career development | 10 | .848 |
| Student personal development | 10 | .899 |
| Faculty employment satisfaction | 9 | .874 |
| Professional development and quality of the faculty | 10 | .722 |
| System openness and community interaction | 9 | .907 |
| Ability to acquire resources | 10 | .906 |
| Organizational health | 7 | .823 |
| Organizational effectiveness | 81 | .958 |

**Table 3. Reliability Estimates for the Organizational Effectiveness Construct from the Pilot Test (N=50)**

**Construct Validity**

A principal component factor analysis with varimax rotation was conducted to assess the construct validity of research instrument upon completion of the final data collection. In reference to Hair, et al (2006), since the number of culture types, innovativeness types and organizational effectiveness dimensions in this study have been reported in a number of other studies in the domain of higher education (e.g. Cameron, 1978; Cameron and Quinn, 2006; Dela Cruz, 2011; Kwan, 2002; Obenchain, 2002; Shin, 1996), the number of factors is already



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known. Then a priori criterion can be useful in extracting the same number of factors that were found in previous studies. For each of the four culture subscales, two innovativeness subscales and nine effectiveness subscales, one component was extracted.

In this regard, several assumptions were tested. The Kaiser- Meyer – Olkin (KMO) measure should be greater than .70, and is inadequate if less than .50. The KMO test tells one whether or not enough items are predicted by each factor. The Bartlett test should be significant (i.e., a significant value of less than .50); this means that the variables are correlated highly enough to provide a reasonable basis for factor analysis (Leech, Barrett, & Morgan, 2008). Table 4 shows the SPSS output for these analyses for organizational culture.

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .725 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 601.563 |
| | df | 6 |
| | Sig. | .000 |

**Table 4. Results of KMO and Bartlett's Test for Organizational Culture (N = 369)**

The Bartlett's test of sphericity is significant since its value (p = .000) is less than alpha (α = .05). On the other hand, the Kaiser- Meyer- Oklin measure of sampling adequacy (.725) is more than the threshold of (.50). According to these two statistics, the data set is suitable for factor analysis. The varimax rotation technique was used to determine the factor loading of each factor (Table 5). Varimax rotation is frequently used in factor analysis since it "reduces the number of complex variables and improves interpretation" (Coakes and Steed, 2007, p.131). The result of rotated component matrix confirmed the presence of four subscales including: clan, adhocracy, market, and hierarchy types for organizational culture scale. Their factor loadings were ranged between .998 and .838. In other words, each subscale was unidimensional.

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Clan | .310 | **.876** | .049 | .366 |
| Adhocracy | **.913** | .284 | .050 | .289 |
| Market | .353 | .414 | .044 | **.838** |
| Hierarchy | .040 | .037 | **.998** | .031 |

**Table 5. Rotated component matrix for organizational culture (N = 369)**

In addition, the results from KMO and Bartlett's test for organizational innovativeness are reported in Table 6. The Bartlett's test of sphericity is significant since its value (p = .000) is less than alpha (α = .05). On the other hand, the Kaiser- Meyer- Oklin measure of sampling adequacy (.500) is equal with the threshold of (.50). According to these two statistics, the data set is suitable for factor analysis.



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| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .500 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 370.772 |
| | df | 1 |
| | Sig. | .000 |

**Table 6. Results of KMO and Bartlett's Test for Organizational Innovativeness (N = 369)**

Based on results of rotated component matrix, there were two subscales of technical and administrative innovations for organizational innovativeness scale in the present study. Both factor loadings were .895. Then, each subscale was unidimensional. These results are shown in Table 7.

| | Component | |
|---|---|---|
| | 1 | 2 |
| Technical | **.895** | .446 |
| Administrative | .446 | **.895** |

**Table 7. Rotated component matrix for organizational innovation (N = 369)**

Regarding to organizational effectiveness, the results of KMO and Bartlett's test for this variable (Table 8) indicates the Bartlett's test of sphericity is significant since its value (p = .000) is less than alpha (α = .05). On the other hand, the Kaiser- Meyer- Oklin measure of sampling adequacy (.731) is more than the threshold of (.50). Using these two statistics, the data set is suitable for factor analysis.

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .731 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 675.886 |
| | df | 36 |
| | Sig. | .000 |

**Table 8. KMO and Bartlett's test for organizational effectiveness (N = 369)**

In addition, as can be seen in the rotated component matrix (Table 9), there were nine subscales for organizational effectiveness scale in the present study. Their factor loadings were ranged between .979 and .913. In other words, each subscale was unidimensional.



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| | Component | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Student educational satisfaction | -.009 | **.965** | -.006 | .060 | .054 | .109 | .181 | .090 | .101 |
| Student academic development | .182 | .198 | -.014 | .039 | .065 | .141 | **.938** | .072 | .132 |
| Student career development | .042 | .119 | .036 | .073 | .227 | **.936** | .142 | .081 | .153 |
| Student personal development | .043 | .057 | .034 | .083 | **.934** | .229 | .065 | .195 | .143 |
| Faculty employment satisfaction | .060 | .099 | .140 | .151 | .197 | .083 | .074 | **.930** | .169 |
| Professional development and quality of faculty | .202 | .118 | .079 | .053 | .154 | .164 | .142 | .179 | **.913** |
| System openness and community interaction | **.960** | -.010 | .022 | .112 | .040 | .039 | .169 | .055 | .173 |
| Ability to acquire resources | .110 | .060 | .147 | **.965** | .076 | .067 | .037 | .136 | .047 |
| Organizational health | .021 | -.006 | **.979** | .140 | .031 | .032 | -.012 | .120 | .065 |

**Table 9. Rotated component matrix for organizational effectiveness (N = 369)**

## FINDINGS AND DISCUSSIONS

### Research Question 1

What is the relationship among organizational culture types, organizational innovativeness, and organizational effectiveness in universities as perceived by the faculty members?

In order to answer the first research question, Pearson's product moment correlations (*r*) were computed among the four culture types, organizational innovativeness and organizational effectiveness. Using the Bonferroni approach to control for Type 1 error across the fifteen correlations, a p value of < .003 was required for significance. The results in Table 10 indicate that there were strong significant positive correlations among the three organizational culture types of adhocracy (r =.772), market (r = .710) and clan (r = .704) with organizational innovativeness in order of high to low. Moreover, the moderate positive significant relationships were observed between these three organizational culture types and organizational effectiveness as follows: adhocracy (r = .474), market (r = .437) and clan (r = .427*)*. Hierarchy culture did not have any significant correlation neither with organizational innovativeness nor with organizational effectiveness. In addition, there was a moderate significant positive correlation (r = .481) between organizational innovativeness and organizational effectiveness according to Cohen's (1992) guidelines. In general, based on the results, the organizational culture types that were positively correlated to organizational innovativeness had also positive links with organizational effectiveness.

| | Clan culture | Adhocracy culture | Market culture | Hierarchy culture | Organizational innovativeness |
|---|---|---|---|---|---|
| Organizational Innovativeness | .704* | .772* | .710* | .091 | |
| Organizational Effectiveness | .427* | .474* | .437* | .074 | .481* |

*p < .003

**Table 10. Bivariate correlations among six research variables (N = 369)**



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The positive correlations among adhocracy, market and clan cultures with organizational innovativeness as well as the lack of association between hierarchy culture and organizational innovativeness support the claim that organizational culture is considered to be one of the key elements related to innovation. While adhocracy culture can increase the development of new services or products, hierarchy culture does not provide support for them Valencia et al. (2010). Further, these findings are also in accordance with other studies which propose that a number of culture features, for instance creativity (Miron, Erez & Naveh, 2004), freedom and autonomy (Martins & Terblanche, 2003), empowerment (Gudmundson, Tower & Hartman, 2003), and risk taking (Jamrog, Vickers, & Bear, 2006) which are the features of adhocracy cultures, cause an enhancement in novelty and innovation.

The results concerning the link between market culture and organizational innovativeness are also consistent with Obenchain, Johnson, and Dion's (2004) argument that the adhocracy and market culture types share similar functional value on external focus. This reasoning matches with that of Detert et al. (2000). He states that organizations, which focus on external features like clients, contestants, and the environment at large, base their novelty on data attained from these external sources. Saraph, Benson, & Schroeder (1989) reported that external orientation (client orientation and strong social relations, suppliers, and other external components) prefers procedures of continuous improvement, which are by themselves means of novelty and innovation. Based on this idea, it is determined that organizational cultures of external orientation prefer novelty. Therefore, the market culture type is likely to be accompanied by upper levels of innovation.

The correlation between clan culture and innovativeness is supported by Duréndez and Garcia (2008). They found that clan culture that is characterized by a managerial style, which promotes working as team, consensus and participation, is associated with innovation. According to Martins and Terblanche (2003), it is to be expected that clan culture as a flexibility-oriented culture will favor innovation since in the literature flexibility is regarded as one of the values most associated with innovative culture.

On the other hand, hierarchy culture is known as a very formalized, structured and controlled place at work (Cameron & Quinn, 2006). According to Bratianu, and Vasilache (2009), innovation is by its own nature associated with some risks. In a culture of permanent control, innovation cannot be developed. Innovation can be implemented and developed in an open organizational culture based on trust and transparency. That is to say, improving communications and breaking down the practices of controlling people and not processes. Therefore, the findings of this study are supported by Bratianu, and Vasilache (2009) who demonstrated hierarchy culture is not related to organizational innovativeness.

The results of this study supported the link between the types of organizational culture and organizational effectiveness. It was found that the type of culture that is dominant in a university has a significant association with organizational effectiveness (Anderson, 2000; Gigliotti, 1987; Dela Cruz, 2011; Lejeune & vas, 2009). Making reference to the literature, one can safely estimate that universities possess attributes of numerous types of organizational



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cultures, and that no university can be regarded as having one cultural type. The findings of this study propose that considering organizational culture type, a university will adjust to continuous change and use suitable actions of organizational effectiveness that are related to the organization and significant to its long-term existence. This idea has been reverberated and supported by some other researchers (Kwan, 2002; Smart, 2003; Tierney, 2008) as well.

Adhocracy culture creates an entrepreneurial place to work. The clan culture prioritizes teamwork, and the market culture is characterized by creating external partnerships (Cameron & Quinn, 2006). Entrepreneurs in an adhocracy culture are more likely to be innovative. Entrepreneurs embedded in entrepreneurial teamwork are more likely to provide customers with something new, using newly introduced technology and attracting a high proportion of their customers outside their home market. These features positively influence organizational effectiveness (Klyver, Hunter, & Watne, 2008). So, it is not surprising that these three culture types at the same time were correlated to organizational effectiveness.

Moon (1999) found that the layers of administration cause delays and undermine communications. Organizations with highly hierarchical systems may have greater transaction costs for each decision and function. Such type of environment may hurdle innovative decisions and new programs. Ingram and Clay (2000) wrote that rules and enforcement mechanism insist to follow general patterns of behaviors, attitudes, and values. So, high profile formalization in an organization may reduce the chances of risk-taking and innovative activities. Therefore, it was expected that hierarchy culture might not be correlated with organizational effectiveness in the current study. This result is supported by Ul Hassan, Shah, Ikramullah, Zaman, & Khan (2011) who reported that organizational effectiveness and bureaucratic sort of culture are not related.

Moreover, the findings of this study indicated a positive and significant correlation between organizational innovativeness and organizational effectiveness. Kasim and Noh (2012) regard organizational innovativeness as an important means for changing an organization in response to changes that occur in its internal and external environment. Supporting the finding of the current study, Hult, Hurley and Knight (2004) explained that when the environment evolves, organization must adopt innovations over time and the most important innovations are those that allow organizations to achieve some sort of competitive advantage contributing to its performance. According to Rowley, Baregheh, and Sambrook (2011), if organizations want to survive, they need to invest in different types of innovation since different types of innovation influence organization in different ways and achieve different outcomes and impact.

**Research Question 2**

Does organizational innovativeness mediate the relationship between each organizational culture type and organizational effectiveness in universities as perceived by the faculty members?

To answer research question 2, the partial correlation coefficients were computed among the four organizational culture types and organizational effectiveness holding constant the



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organizational innovativeness. A p value of < .005 was required for significance using the Bonferroni approach to control for Type 1 error across the ten partial correlations. The findings in the Table 11 indicate that partial correlations between clan culture (r p = .142, p < .005), adhocracy culture (r p = .184, p < .005) and market culture (r p = .155, p <.005) with organizational effectiveness were positive, significant, and small in magnitude, according to Cohen (1992). This result illustrated that the correlations between organizational culture types and organizational effectiveness partialling out the effects of organizational innovativeness were not equal to zero in value. Therefore, organizational innovativeness was not the sole determinant in the relationship between organizational culture and organizational effectiveness. Organizational culture had both a direct and indirect (through innovation) relationship with organizational effectiveness in reference to Green and Salkind (2011). Table 11 shows the findings for this research question.

| | **Clan culture** | **Adhocracy culture** | **Market culture** | **Hierarchy Culture** |
|---|---|---|---|---|
| **Organizational effectiveness** | .142* | .184* | .155* | .035 |

*p < .005

**Table 11. Partial correlations controlling for organizational innovativeness (N=369)**

Then, to further explore the mediation effects of organizational innovativeness between each type of organizational culture and organizational effectiveness, Baron and Kenny's (1986) and Kenny's (2012) four steps of regression were used. The first step showed a significant relation between the organizational culture type and the organizational effectiveness. The second step indicated that organizational culture type was related to organizational innovativeness. The third step showed that organizational innovativeness was related to organizational effectiveness. The final step revealed that the strength of the relationship between the organizational culture type and organizational effectiveness is significantly reduced when organizational innovativeness is added to the model. The relationship between the organizational culture type and organizational effectiveness disappears when organizational innovativeness is a full mediator. If the relationship gets weaker but still remains significant, a partial mediation effect of organizational innovativeness is found. Both Steps 3 and 4 are estimated in the same equation (Judd & Kenny, 2010; Zhao, Lynch, & Chen, 2010).

Table 12 shows the results of statistical analysis that examined the mediating role of organizational innovativeness between clan culture and organizational effectiveness. Based on Baron and Kenny's (1986) approach, in step 1 of the mediation model, the regression of clan culture on organizational effectiveness, ignoring the organizational innovativeness, was significant (β = .427; p < .001), Step 2 showed that the regression of the clan culture on the mediator, organizational innovativeness, was also significant (β = .704; p < .001). Step 3 of the mediation process showed that the mediator (organizational innovativeness), controlling for the clan culture, was significant (β = .357; p < .001). Step 4 indicated that, the introduction of the organizational innovativeness into the equation weakened the direct relationship between



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clan culture and organizational effectiveness, but still remained significant (β = .175; p = .005). This suggests that organizational innovativeness acts as a partial mediator.

| Steps | Predictor | Prediction | B | SEB | β | T | P |
|---|---|---|---|---|---|---|---|
| 1 | Clan culture | Organizational effectiveness | .188 | .021 | .427 | 9.045 | .000 |
| 2 | Clan culture | Organizational innovativeness | .705 | .037 | .704 | 19.015 | .000 |
| 3 & 4 | Clan culture | | .077 | .028 | .175 | 2.741 | .005 |
| | and Organizational | Organizational effectiveness | | | | | |
| | innovativeness | | .157 | .028 | .357 | 5.590 | .000 |

**Table 12. Results of the SPSS mediation analysis for clan culture (N = 369)**

Table 13 shows the results of statistical analysis that examined the mediating role of organizational innovativeness between adhocracy culture and organizational effectiveness. Based on Baron and Kenny's (1986) approach, in step 1 of the mediation model, the regression of adhocracy culture on organizational effectiveness, ignoring organizational innovativeness, was significant (β = .474; p < .001). Step 2 showed that the regression of adhocracy culture on organizational innovativeness was also significant (β = .772; p < .001). Step 3 of the mediation process showed that the mediator (organizational innovativeness), controlling for adhocracy culture, was significant (β = .285; p < .001). Step 4 indicated that, the introduction of organizational innovativeness into the equation weakened the direct relationship between adhocracy culture and organizational effectiveness, but still remained significant (β = .254; p <.001). This suggests that organizational innovativeness acts as a partial mediator.

| Steps | Predictor | Prediction | B | SEB | β | T | P |
|---|---|---|---|---|---|---|---|
| 1 | Adhocracy culture | Organizational effectiveness | .173 | .017 | .474 | 10.306 | .000 |
| 2 | Adhocracy culture | Organizational innovativeness | .641 | .028 | .772 | 23.298 | .000 |
| 3 & 4 | Adhocracy culture | | .093 | .026 | .254 | 3.580 | .000 |
| | and Organizational | Organizational | | | | | |
| | innovativeness | effectiveness | | | | | |
| | | | .125 | .031 | .285 | 4.012 | .000 |

**Table 13. Results of the SPSS mediation analysis for adhocracy culture (N = 369)**

Table 14 shows the results of statistical analysis that examined the mediating role of organizational innovativeness between market culture and organizational effectiveness. Based on Baron and Kenny's (1986) approach, in step 1 of the mediation model, the regression of market culture on organizational effectiveness, ignoring the mediator, was significant (β =



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.437; p < .001). Step 2 showed that the regression of the market culture on the mediator, organizational innovativeness, was also significant (β = .710; p < .001). Step 3 of the mediation process showed that the mediator (organizational innovativeness), controlling for the market culture, was significant (β = .344; p < .001). Step 4 indicated that the introduction of organizational innovativeness into the equation weakened the direct relationship between market culture and organizational effectiveness, but still remained significant (β =. 193; p = .003). This suggests that organizational innovativeness acts as a partial mediator.

| Steps | Predictor | Prediction | B | SEB | β | T | P |
|---|---|---|---|---|---|---|---|
| 1 | Market culture | Organizational effectiveness | .172 | .019 | .437 | 9.306 | .000 |
| 2 | Market culture | Organizational innovativeness | .636 | .033 | .710 | 19.337 | .000 |
| 3 & 4 | Market culture | | .076 | .025 | .193 | 2.993 | .003 |
| | and Organizational | Organizational effectiveness | | | | | |
| | innovativeness | | .151 | .028 | .344 | 5.346 | .000 |

**Table 14. Results of the SPSS mediation analysis for market culture (N = 369)**

The hierarchy culture is not reported because it showed no significant relations with either organizational innovativeness (r = .091, p = .82) or organizational effectiveness (r =.074, p = .156), indicating that this variable could not be entered into the regression equations. Overall, these results confirm the earlier partial correlation analysis of the data.

Based on the findings, organizational innovativeness was found to play a partial mediating role between organizational culture types (Clan, Adhocracy, and Market) and organizational effectiveness. The three primary criteria for establishing that one variable causes another to change include: (a) there is an association between the two variables; (b) the association is not spurious; and (c) the cause precedes the effect in time. On a conceptual level, the proposed relationships between the predictor and the mediator should be grounded in the previous research (Frazier, Tix, & Barron, 2004). Furthermore, given that the meditational model essentially is one in which the predictor causes the mediator to change, which in turn causes the outcome to change, the mediator ideally should be something that can be changed (Mackinnon et al., 2002). All these conditions were considered in the current study.

It seems that there is practically no previous research on the mediation effects of organizational innovativeness between organizational culture and organizational effectiveness. The results of the current study provide an invaluable direction for research. As organizational culture enhances organizational effectiveness through organizational innovativeness, organizational culture and innovativeness must be considered simultaneously by academic authorities in universities. This will pave the way for institutes of higher education to achieve better organizational effectiveness.



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## CONCLUSION

Drawing upon existing empirical evidences, this study presented a study of the relationships between organizational culture, organizational innovativeness and organizational effectiveness. Existing literature is abundant in explaining these three variables as separate constructs. But the literature seldom sheds light on the relationship between the three.

In the literature, there are two substantial predictors of institutional effectiveness: (1) organizational culture (Bergquist & Pawlak, 2008; Schein, 2004), and (2) organizational innovativeness (Damanpour et al., 2009; Lin, 2006; Tajeddini, 2011; Wang, 2005). There were two research objectives for the current study. These objectives were as follows:

1. To determine the relationship between organizational culture types, organizational innovativeness and organizational effectiveness in private universities as perceived by the faculty members;

2. To determine the mediation effects (if any) of organizational innovativeness between each organizational culture type and organizational effectiveness in private universities as perceived by the faculty members.

The results of the statistical analyses for the two research questions of the present study proved that:

1. There were strong positive correlations among the three organizational culture types of adhocracy, market and clan with organizational innovativeness. The moderate positive relationships existed between these three organizational culture types and organizational effectiveness. Hierarchy culture did not have any significant relationship either with organizational innovativeness or with organizational effectiveness. There was a moderate positive correlation between organizational innovativeness and organizational effectiveness. This result that was related to the first research question may imply that organizational culture has a connection with organizational effectiveness mainly by facilitating innovation. Therefore, universities should improve innovativeness to become more effective.
2. The results illustrated that a partial mediation effect of organizational innovativeness was found between clan, market, and adhocracy cultures with organizational effectiveness. Therefore, organizational culture not only directly influences both innovativeness and effectiveness but also influences effectiveness through innovation. The implication of the second research question is that the university administrators should be aware of the benefits from the implementation of a culture that supports innovation. In reference to Vermeulen (2004), academic administrators should understand that an innovative attitude implies the adoption of new ideas and values that are not threats but strengths, in order to assure the future of universities.

## RECOMMENDATIONS

This study defined the types of the culture and innovativeness that anticipate effectiveness of nongovernmental universities. A review of the findings of this study, in conjunction with the



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current literature on organizational culture, organizational innovativeness, and organizational effectiveness lead to the following recommendations:

Despite the significant effect of organizational culture and organizational innovativeness on organizational effectiveness, these two variables are not sufficient to explain the variance of universities' effectiveness comprehensively. There is a myriad of other organizational factors not captured in this study. Variables, including organizational learning (Jiménez-Jiménez & Sanz-Valle, 2011), knowledge management (Zheng, Yang & Mclean, 2009), organizational trust (Johnson, Shelton, & Yates, 2012), positive practices (Cameron, Mora, Leutscher, & Calarco, 2011), and organizational justice (Park & Yoon, 2009), can have significant effects on organizational effectiveness. As such, it is proposed that future studies expand the findings of the current study by involving other variables in order to explore the extent to which different factors may operate synergistically with respect to organizational effectiveness.

Moreover, future research is needed to identify other mediating variables in the culture-effectiveness relationship, as they would help expand the current understanding of "how" and "why" an organization's culture plays a role in its effectiveness. Understanding the mediators between culture and effectiveness allows for a more informed approach to guide and direct organizations towards adopting constructive cultures. Mediating variables can provide immediate feedback on the appropriateness of an organization's culture. Based on this feedback, corrections could be identified and implemented to the organization's culture in order to improve its effectiveness.

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