
**AN ANALYSIS OF THE RELATIONSHIP BETWEEN ORGANIZATION CULTURE AND PERFORMANCE: CASE STUDY OF A CHINESE UNIVERSITY**

**Abstract.** This study explored the relationships between university organizational culture and contextual performance in a Chinese university, with commitment as a mediating variable. The findings revealed that organizational culture had a significant impact on commitment of employees. At the same time, commitment impacted contextual performance positively. We contribute to the current literature by contradicting many past studies on the impact of organizational culture on performance. We found that organization culture had no significant impact on performance. This could be due to the unique nature of Chinese universities as top leadership is appointed by the central government. Based on the Competing Values Framework, most Chinese universities lie on a continuum between clan and hierarchy organization culture where the structure is highly formalized with precise and reinforced rule yet emphasizing the values of teamwork and family orientation. The study also suggested adopting different governance structures to meet the rising demands for greater autonomy from academics and administrators and shifting the organizational cultures towards the right half of the Competing Values Framework towards an adhocracy and market culture. The data collected in this study was analyzed using Structural Equation Modelling (SEM) method with AMOS. The descriptive analysis of the research data was performed using SPSS.

**Keywords:** organizational culture; competing values framework; performance; commitment.
1. INTRODUCTION

In 2017, China had 2,914 colleges and universities, comprising of 2,631 universities (including 265 private higher education institutions). There were 793 postgraduate training institutions, consisting of 576 universities and 217 scientific research institutes (MOE China, 2018). The popularization of higher education is a key to China’s economic growth. At the same time, it helps to reduce the disparity in developmental growth between the different regions.

Universities are complex social organizations with a distinctive type of organizational culture shaped by the continuous interactions between academics, administrators, staff, students, and government (McNay, 1995; Jameson, 2011). University’s organizational culture is a key determinant of the success of a university. At present, China’s universities are actually a typical model of executive power. The university organizational culture model is dominated by bureaucratic mode and influenced by China’s political system. Zhang (2009) noted that the reform policies in Chinese universities have focused on the surface level of organizational culture while the deeper levels are left intact. Much research has been done on university organizational culture in Western developed countries, but insufficient studies have been conducted on the same topic in China.

Organizational commitment is an important concept in contemporary organizational behavior and human resource management. The impact of organizational commitment on employee performance has attracted much attention in business management and public management. Much research has been done on the commitment of university members. Attributes such as job satisfaction, organizational commitment, and psychological contract directly affect employee performance (Guan et al., 2014; Li et al., 2017).

The commitment of middle level managers is important to produce the best possible outcomes for their learners and their stakeholders. Deans and heads of departments have the responsibility to help staff members to adapt to any changes in institutional priorities. Research on deans and their leadership commitment and performance is sparse. Middle level managers should possess good problem-solving skills in addition to good interpersonal skill and be resilient under difficult circumstances. As academic leaders, they need to be equipped with the necessary competencies to perform their leadership roles (Shahmandi et al., 2011). There is a gap in the existing literature regarding relationships between organizational culture and middle level managers’ contextual performance in Chinese universities settings.

The purpose of this study is to investigate the relationship between the organizational culture and middle level managers’ contextual performance with commitment as a mediating variable in a Chinese public university. From the findings of the study, the authors suggested the governance structure of public universities be remodeled to accommodate the demands for greater autonomy from academics and administrators.

2. LITERATURE REVIEW
2.1 Organization Culture

Tierney (1988) defined organizational culture as a force that is derived from the values, processes, and goals held by those most intimately involved in the workings of the organization. It is manifested through language, symbols, rituals, values, beliefs and
behavior. Culture plays an important role in the organization’s performance. A supportive organization culture motivates employees to perform more productively (Ritchie, 2000).

The Competing Values Framework based on the original research of Quinn & Rohrbaugh (1983) consists of thirty-nine indicators of effectiveness for organizations. It is made up of two major dimensions and four quadrants. One dimension focuses on the well-being and development of people in the organization to an external orientation with a focus on differentiation, competition, and rivalry. The other dimension focuses on organizational structure with an emphasis on stability to an emphasis on flexibility.

The two dimensions give rise to four quadrants, each representing a set of organizational and individual factors. They refer to:

a) Clan culture which refers to family-like organizations. The emphasis is on collaboration between members of the organization where human development and commitment give rise to organizational effectiveness.

b) Adhocracy culture which emphasizes on innovation and creativity of the people. The vision and adaptation to changes produce organizational effectiveness.

c) Market culture refers to market-like organizations which focuses on market share, competition and profitability.

d) Hierarchy culture which are strongly structured and formalized with reinforced rules and policies. The emphasis is on stability, consistency and predictability

Denison (1990) developed the Denison Organizational Culture Survey (DOCS) which comprises four dimensions of organizational culture: adaptability, mission, involvement and consistency. Each of these four components corresponds to three sub-dimensions, and each sub-dimension consists of five more specific indicators to measure. This eventually formed a measurement system that takes 4 cultural features as the core, 12 sub-dimensions as the intermediate link, and 60 specific indicators as for investigation. Denison conducted a detailed investigation on more than a thousand organizations to prove the validity and reliability of his model.

2.2 University Organization Culture

Tierney (1988) is applied the concept of organizational culture from business literature to research in higher education. At the university level, culture can be defined as the values and beliefs of university stakeholders (i.e., administrators, faculty, students, board members and support staff), based on tradition and communicated verbally and non-verbally (Bartell, 2003). Values and beliefs are thought to greatly influence decision-making processes at universities and shape individual and organizational behaviors. Behaviors based on underlying assumptions and beliefs are conveyed through stories, special language and institutional norms (Bartell, 2003; Sporn, 1996).

Sporn (1996) noted that universities are complex organizations and contain multiple variations of organizational culture — at the individual and institutional levels. Different stakeholders which include students, staff, administrators and professors have their own priorities and these pose major challenges to university management. Schein (2010) believed that the lack of understanding of organizational culture exhibited by leaders in higher education was inhibiting their ability to lead their institutions to effectively. Tierney
(1988) stressed that by having a better understanding of organizational culture, higher education administrators could enhance their daily decision making.

2.3 China’s University’s Organizational Culture

There are not enough studies done on university organizational culture from the perspectives of education management. University culture and university organizational culture are different, yet related. University culture is a combination of various sub-cultures developed over time (Deal and Kennedy, 1982; Bartell 2003). It includes material culture (infrastructure and facilities), institutional culture (rules & regulations, operations systems and management systems), and the spiritual culture (identity, values and beliefs).

University organizational culture is defined as a pattern of shared values, beliefs, attitudes and behavior of the members in the organization. It relies on the continuous interactions of top management, administrators, faculty members and students. It shapes the organizational systems and could facilitate or hinder the organization’s from achieving its goals (Yilmaz, 2008).

The funders of China’s public universities are mainly the central and local governments, who provide institutional and financial support to universities. The state will determine the organizational mission and goals of the university it funded. Government support for universities is positively correlated with their control over universities. Under the current system with a high concentration of education administrative authority, it is very difficult to produce a highly autonomous university operation mode dominated by academic authority. Due to the strong governmental influence, universities in China show a lesser degree of differentiation than European or American universities.

2.4 Organizational Commitment

Organizational commitment is one of the most important work-related attitudes which has been studied in management and organizational behavior. Allen & Meyer (1990) described organizational commitment as a three dimensional concept characterized by affective, continuance and normative dimensions. It is a strong belief in an organization’s goals and values, a willingness to exert considerable effort on behalf of an organization and a strong desire to remain a member of the organization (Mowday et al., 1984). Commitment is typically conceived as an individual’s psychological bond to the organization, including a sense of job involvement, loyalty and a belief in the values of the organization and a force which obliged employees to continue in an organization. Commitment is an ongoing process and an attitude which reflect the loyalty of employees towards the organization (Northcraft and Neale, 1996).

2.5 Contextual Performance

Borman & Motowidlo (1993) proposed a two-dimensional model consisting of task and contextual performance. Task performance refers to the behavior specified by the organization. It covers the fulfillment of the requirements that are stated in the employment contract. Contextual performance, on the other hand, relates to spontaneous behavior, organizational citizenship behavior, pro-social behavior and dedication to the spirit of organization. It does not contribute directly to organizational performance but enhances the psychological and social aspects of the organization. In this study, we are interested in
contextual performance and have adapted Van Scotter & Motowidlo (1996) performance measurement scale.

2.6. Middle level managers of university

Research on the performance of deans and heads of departments is sparse. Effective leaders are required to use problem-solving processes, maintain group effectiveness and develop group identification. The middle level managers play an important role in maintaining the normal operations of universities, participating in the formulation of university strategies, implementing upper decision-making, and innovating the system. They are important intermediaries between top management and lower level staff. As leaders and managers of functional departments, they need to plan their own department short-term, medium and long-term goals. In the face of various problems encountered in their work, they need to thinking creatively, lead staff to contribute their working ideas, and seek solutions to potential problems.

3. RESEARCH DESIGN

This study is a quantitative research aimed at assessing the relationship between the organizational culture and middle level managers’ contextual performance, with commitment as a mediating variable. Through this research, the authors seek to propose some recommendations to improve the contextual performance of middle level managers. Coldwell and Herbst (2004) noted that the using surveys are very cost-effective. However, it does not permit inferences related to causality. Leedy and Omrod (2005) stressed that quantitative research be used to answer questions about relationships among measured variables with the purpose of predicting and controlling phenomena.

3.1 Research objective

The purpose of this paper is to study the impact of organization culture on middle-level managers’ contextual performance with commitment as a mediating variable (Figure 1).

Hypothesis Development

H1: Organizational culture has a significant influence on commitment
H2: Organizational culture has a significant influence on contextual performance
H3: Employee commitment has a mediating influence between organization culture and contextual performance
Figure 1: Framework
4. METHODOLOGY

Participants

The data of the study was collected from 55 participants of a public Chinese university. The respondents were middle level managers and serve as Dean, Deputy Dean, Director, and Vice Director. A total of 60 questionnaires were distributed, yielding a response rate of 92%.

The instrument

The questionnaire (illustrated in Appendix 1) consisted of a total of 43 questions pertaining to four (4) sections. Section A consisted of 6 questions on the respondents’ personal details. For Section B, the authors adapted Denison Organizational Culture Survey Scale. This section consisted of 15 questions on the university culture, in the areas related to involvement, consistency and adaptability.

In Section C, the authors adapted Allen and Meyer Commitment Scale to suit the university environment. This section consisted of 12 questions on employee commitment. In Section D, an adaptation of Van Scotter and Motowidlo contextual performance scale was used for the study. This section consisted of 10 questions on job performance.

The survey items for Section B, C and D were designed as statements measured on the 5-point Likert scale where 1 represents “Strongly Disagree”; 2 represents “Disagree”; 3 represents “Slightly Agree”; 4 represents “Agree”; and 5 represents “Strongly Agree”.

Out of the 55 individuals in the study sample, 71% were men and 21% were women. From the age perspective, 25% of the respondents were below 35 years of age, 55% were between 36 and 45 years old and 20% were above 46 years of age. The highest percentage of respondents (56%) hold a Masters degree, followed by 26% with Bachelor degree and 18% with Doctoral degree. In terms of administrative position, 44% hold a Vice Director position, followed by 26% with Deanship, 22% Directorship, and 8% as Vice Dean (Table 1).

We assessed the hypothesized model with SPSS and structural equation modelling technique using AMOS.

<table>
<thead>
<tr>
<th>Demographics of participants</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>29</td>
</tr>
<tr>
<td>Male</td>
<td>71</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>&lt; 35</td>
<td>25</td>
</tr>
<tr>
<td>36 – 45</td>
<td>55</td>
</tr>
<tr>
<td>&gt;45</td>
<td>20</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>26</td>
</tr>
<tr>
<td>Masters</td>
<td>56</td>
</tr>
<tr>
<td>Doctoral</td>
<td>18</td>
</tr>
<tr>
<td>Position</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>22</td>
</tr>
<tr>
<td>Vice Director</td>
<td>44</td>
</tr>
<tr>
<td>Dean</td>
<td>26</td>
</tr>
<tr>
<td>Vice Dean</td>
<td>8</td>
</tr>
</tbody>
</table>
5. RESULTS AND DISCUSSIONS

5.1 Reliability Analysis

Cronbach’s alpha is a commonly used measure to test the extent to which multiple indicators for a latent variable belong together. It ranges from 0 to 1.0. From Table 2, Cronbach's alpha shows a reading of 0.987, which indicates a high level of internal consistency for our scale with this specific sample. The instrument can be deemed as reliable and valid.

Table 2

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.987</td>
<td>.987</td>
<td>37</td>
</tr>
</tbody>
</table>

The removal of any question would not result in a change in Cronbach's alpha, meaning that the responses in the questionnaire have been reliable. We can also see that the "Corrected Item-Total Correlation" values for all the questions were above 0.65, indicating a high degree to which one item correlates with the total scores from all the other items that remain.

5.2 SEM Analysis

We use multiple indices of fit including the Root Mean Square Error of Approximation (RMSEA), (Goodness of Fit Index) GFI and Comparative Fit Index (CFI) to evaluate the model’s fit to the empirical data.

Table 3

<table>
<thead>
<tr>
<th>Index</th>
<th>RMSEA</th>
<th>GFI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.128</td>
<td>1.0</td>
<td>0.794</td>
</tr>
<tr>
<td>Standard</td>
<td>&lt;0.1</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
</tr>
<tr>
<td>Information</td>
<td>Marginal</td>
<td>Good</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

The Good of Fit Index (GFI) was created as an alternative to the Chi-Square Test (Joreskog and Sorbom, 1984). It varies from 0 to 1. A cut-off point of 0.90 has been recommended for the index. From Table 3, the reading shows that there is a good fit.

The Comparative Fit Index (CFI) compares the existing model fit with a null model which assumes that the latent variables in the model are uncorrelated (Byrne, 1998). A standard value of CFI greater than 0.9 indicates a good fit. This index is least affected by sample size. As the reading in Table 2 indicates a value close to 0.9, there is a marginal fit for CFI.
The Root Mean Square Error of Approximation (RMSEA) was developed by Steiger and Lind (1980). It gives an indication of how well the chosen parameter estimates would fit the population covariance matrix (Byrne, 1998). A value of less than 0.1 indicates a good fit (MacCallum et al, 1996). The reading in Table 2 shows a value close to 0.1, indicating a marginal fit for RMSEA.

5.3 Hypothesis Test

Table 4 below shows the standardized regression weights for paths in the SEM model, along with standard errors, critical rations and p-values.

<table>
<thead>
<tr>
<th>Hypotheses Tests</th>
<th>Estimates</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment &lt; --- Culture</td>
<td>1.415</td>
<td>.222</td>
<td>6.378</td>
<td>***</td>
<td>Supported</td>
</tr>
<tr>
<td>Performance &lt; --- Commitment</td>
<td>1.029</td>
<td>.144</td>
<td>7.134</td>
<td>***</td>
<td>Supported</td>
</tr>
<tr>
<td>Performance &lt; --- Culture</td>
<td>-.157</td>
<td>.175</td>
<td>-.899</td>
<td>.369</td>
<td>Not supported</td>
</tr>
</tbody>
</table>

p< 0.01 level

Hypothesis 1: Organizational Culture has an impact on employee commitment.
The results from Table 4 above shows that culture has a positive effect on commitment (1.415). Based on Pearson correlation analysis, organizational culture has a positive impact on employee commitment with r values of between 0.471 and 0.827, significant at the 0.01 level. Therefore, Hypothesis 1 is supported.

Hypothesis 2: Organizational Culture has an impact on employee performance.
The results in Table 3 show that culture has a negative effect on performance (-.157). The critical ratio of -0.899 with p value of 0.369 is not statistically significant. Therefore, Hypothesis 3 is not supported.

Hypothesis 3: Employee commitment mediates the relationship between organizational culture and employee contextual performance.
The results in Table 4 shows that commitment has a positive effect on performance (1.029). The results of Pearson correlation analysis showed that commitment has a positive impact on employee performance with r values of between 0.684 and 0.861, significant at the 0.01 level. Hypothesis 3 is supported.

The inclusion of the mediating variable of commitment is accompanied by a drop in the values of the regression coefficients representing the direct effects of the culture on performance. The decrease in beta weights from 1.28 to -0.16 indicates that commitment mediates the relationship between culture and contextual performance.

The Good of Fit Index (GFI) was created as an alternative to the Chi-Square Test (Joreskog and Sorbom, 1984). It varies from 0 to 1. A cut-off point of 0.90 has been recommended for the index. From Table 2, the reading shows that there is a good fit.
The Comparative Fit Index (CFI) compares the existing model fit with a null model which assumes that the latent variables in the model are uncorrelated (Byrne, 1998). A standard value of CFI greater than 0.9 indicates a good fit. This index is least affected by sample size. As the reading in Table 2 indicates a value close to 0.9, there is a marginal fit for CFI.

The Root Mean Square Error of Approximation (RMSEA) was developed by Steiger and Lind (1980). It gives an indication of how well the chosen parameter estimates would fit the population covariance matrix (Byrne, 1998). A value of less than 0.1 indicates a good fit (MacCallum et al, 1996). The reading in Table 2 shows a value close to 0.1, indicating a marginal fit for RMSEA.

6. CONCLUSION

This research is an empirical study of the impact of organizational culture on middle-level managers’ contextual performance under the specific situation of a Chinese public university. Our findings in Hypothesis 1 shows that organizational culture has a positive impact on employee commitment. This is in line with previous works of Yiing and Ahmad (2009), Rashid et al., (2003) and Shannawaz and Hazarika (2004).

Hypothesis 2 shows that employee commitment has a positive impact on contextual performance. The empirical results support the findings of Zefeti and Mohamad (2017) that organizational commitment has a significant impact on contextual performance.

Hypothesis 3, however, shows that organizational culture does not have a significant impact on contextual performance, contradicting the results of previous studies done by Zhang (2016) and Roijen et al., (2017). This may possibly be due to the bureaucratic nature of the university as the culture of the university is determined by the top leadership of the university. The Chinese higher education system has traditionally followed the state-controlled model with universities having little autonomy. While public universities currently enjoy more autonomy than in the past, the President and the Party Secretary are still appointed by the government. The majority of funding comes from the government which still dictates the major decisions of the universities. As China’s higher education sector reforms, it is necessary to redistribute power within the university with new governance structure to meet the rising demands for greater autonomy from academics and administrators.

From the perspective of the Competing Values Framework, Chinese universities lies on the continuum between clan culture and hierarchy culture due to the influence of Confucianism which emphasize on family values and communism which focuses on centralized control and order. To achieve world-class university status, universities need to focus on three key areas: talent, governance, and resources. Talent encompasses academic talent of professors, researchers, staff and students. Governance
include supportive regulatory framework, academic freedom, leadership and culture of excellence. Resources consisted of endowment revenues, budgets and research grants. While formal authority still lies with the President, the concept of shared governance and collegiality should receive greater attention. Universities may have little choice but to slowly reculture themselves if they wish to see improvements in contextual performance of their employees. University leadership needs to adopt a new model of shared governance and adapt to an increasingly globalized workplace. This will result in gradual shift of university organizational culture from the *clan – hierarchy* dimension towards the *adhocracy-market* dimensions. A culture of openness and transparency should be encouraged and creative talent should be appreciated for China universities to remain competitive (Figure 2).

<table>
<thead>
<tr>
<th>Flexibility</th>
<th>Internal focus</th>
<th>Clan culture</th>
<th>Adhocracy culture</th>
<th>External focus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Hierarchy culture</td>
<td>Market culture</td>
<td></td>
</tr>
<tr>
<td>Stability &amp; Control</td>
<td></td>
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</tbody>
</table>

**Figure 2: Shift in organizational culture**

**Limitations**

This study had focused on one university in Guanxi province, limiting the generalization of results. The authors suggest the need for additional research on organizational contextual performance across China’s universities, employing a longitudinal design. It would also be beneficial to investigate other factors that lead to higher task performance and contextual performance such as leadership styles, job satisfaction, and managerial experience. The impact of distinct organizational cultural types on organizational efficiency is another area of research which warrants further attention.

**References**


Ministry of Education of the People’s Republic of China (2018). Number of Higher Education Institutions. Statistics Department, MOE China


