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# Perceiving Organisational Culture Influence on Knowledge Management Performance

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**Abstract:** In this paper we analyze the relationships between certain knowledge management, organizational culture, and the results of petrochemical industries. Facing high competitive market, the enterprises should be encouraged to reform and develop knowledge management performance. The objective of this research is to identify petrochemical firms by using Decision Making Trial and Evaluation Laboratory (DEMATEL) approaches to solve this KM adoption problem, and ranks the gaps of the KM aspects in control items to achieve the aspired level of performance. This paper is matrix method-oriented, and the depth of investigation into any individual case is limited. Therefore, the methods proposed in same fields of study should preferably be used to associate deeper and more practical implications.

**Keywords:** DEMATEL, Organizational Culture, Knowledge Management, Petrochemical Industries

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## 1. Introduction

Why the firms rely so heavily on organizational members to share knowledge? The trouble is that, while those systems are good at transferring explicit knowledge, it is typically needed to effectively transfer implicit knowledge in organizations. Today, organizational knowledge is one of its most important resources, the other knowledge is considered as a valuable key in competition [17, 3, 31]. Not only it is known as the foundation for stable development, but also it is the source of keeping competitive nature of an organization which is an advantage for the organization [2].

Knowledge management is activities to accomplish problem solving, recommendation for decision making and organization goals [34]. In order to achieve organizational goal and make knowledge management initiatives work in practice, the employees within the firm must be willing to share their knowledge with others. Leaders should understand the culture both on an organizational and knowledge level. Davenport & Prusak [6] described a major influence to cultural knowledge sharing willingness is the issue of reciprocity. This refers to the individual's need to perceive a current or future return on the knowledge he chooses to share.

In terms of organization, more and more firms seek to improve their business performance via promoting the knowledge management mechanism [18].

With knowledge is recognized as an essential issue for sustaining competitive advantage and improving performance of organizations. Foss & Pedersen [9] also emphasized that knowledge is a critical organizational resource that provides a competitive advantage in a competitive and dynamic economy. The objective of knowledge management is to effectively utilize the knowledge, and promote the knowledge sharing in order to achieve firm's overall innovation and continuous competitiveness [35]. Thus, effective KM is the way to improve an organizational performance and competitiveness.

In corporate culture, knowledge management is often perceived as having difficulties, with limited impact. Watson [38] argued that culture could not change people's behavior, in the management of knowledge on the grounds that the organizational culture to obstruct knowledge transfer. During the past decades, there have been huge changes on informational technology and product development in many fields. In particular, petrochemical industry, which is an extremely complex industry [21] and plays a role of navigational economy, the future can only be high value

products and knowledge management performance in the direction of professional development.

Increasing importance of knowledge in contemporary society requires a change thinking creation in organization performance. The goal of knowledge management systems is supporting creation, transfer and application of knowledge in organizations [32].

Many of established firms in response to rapid and dramatic changes provided in their internal and external environment have provided a new foundation for their operation structure [23]. In petrochemical industries, leaders requires to overcome the traditional corporate hierarchy and share knowledge across the organization while make efforts in individual business unit performance. As knowledge is taking on a principal role, most companies are expecting their knowledge management (KM) to be performed effectively in order to transform the knowledge into competitive merits [39].

The purpose of this research is to perceive how organizational culture influences KM initiatives. In this study, use a case study methodology to recognize the relationship of the organizational culture to identify the knowledge management performance.

## 2. Literature Review

### 2.1. Organizational Culture (OC)

A key unifying element of this definition is the shared nature of culture [28]. Organizational culture is often described as the character of a company. Organizational culture is not just an important factor of an organization; it is the central driver of superior business performance. Gallagher and Brown [10] stated that a firm's culture influences everything such a company does. Ofoleta [26] found that organizational culture is an important condition that operates in every organization. In terms of organizations, a character of organizational culture creating conditions conducive to the implementation of knowledge management [12]. The culture of firms subordinate to knowledge and interprets it as elements of organization structure providing perfect conditions for generating and sharing knowledge [7].

Organizational culture supporting knowledge management has importance of cultural antecedents to enterprises [24]. Alavi & Leidner [1] noted that organizational culture is one of the most significant elements in achieving knowledge management success. In addition, organizational culture is also one of the variables of interest to be investigated in relation to the effect on KM. Organizational culture contains the values, beliefs and principles that form the basis for an organization's management system, which may influence KM [20].

Watson [38] argued that organizational culture be identified as the biggest impediment to knowledge transfer, citing the inability to change people's behaviors as the biggest hindrance to managing knowledge. Irawanto et al. [16] also stated that organizational culture have four dimensions, such as

Involvement, Consistency, Adaptability and Mission. Wallach [37] also realized that organizational culture as a composite of distinctive cultural types, which divided into three categories, such as bureaucratic culture, innovative culture and supportive culture.

### 2.2. Knowledge Management (KM)

Knowledge is interpreted by individuals and given a context and anchored in the beliefs and commitments of individuals [25]. Knowledge management has become a well known term. But the real challenge facing most companies is that of faster innovation. Knowledge management is fundamentally the management of corporate knowledge and intellectual assets that can improve organizational performances [15]. In addition, Moghtadaei & Bakhshayesh [22] also described that KM helps the organizations to identify, select, organize, distribute and transfer the important information as a part of organization memory and they are without definite structure in firms.

Girard & Girard [11] argued that KM is the process of enabling knowledge flow to enhance shared understanding, learning, and decision making. In addition, KM is explicit management of processes enabling individual and collective knowledge resources to be created, stored, shared, and used for benefit.

Knowledge management is a set of practices that helps to improve the use and sharing of data and information in decision making [27]. KM is the essential speculation which grants to manage and share the knowledge within an organization, and to create new collective knowledge of the group [33]. In terms of most efficient method, KM can be defined as the process for acquiring, storing, diffusing and implementing the organizational boundaries between the tacit and explicit knowledge [19].

Besides, Knowledge management can be defined four dimensions as acquisition, storage, dissemination and implementation of corporate objectives [19]. Because KM is a concept in which an enterprise consciously gathers, organizes, shares, and analyzes its knowledge in terms of resources [29]. Finally, the proper dimension of KM is integrated and complied with practical aspect, which are acquisition, dissemination and innovation in firms.

### 2.3. Relationship Between Organizational Culture (OC) and Knowledge Management (KM)

Today, culture is expressed by patterns of thinking, artifacts and depends on man's capacity for learning and transmitting knowledge to succeeding generations in every organization [14]. Ruggles [30] noted that organizational culture was a major barrier to success in their knowledge management initiatives. Chmielewska and Sitko [5] pointed out that organizational culture describing enterprise is understood as shared by employee's system of cultural values. Therefore, knowledge of culture values appropriate to knowledge management may determine shaping organizational culture [5].

Chang and Lee [4] noted that supportive culture and innovation culture have a significant positive effect on acquisition and dissemination of knowledge. According to the results of research innovative culture, have the most effect on knowledge acquisition and dissemination.

Furthermore, Gold et al. [13] also found that more supportive, encouraging organizational cultures positively influence KM infrastructure capability and resulting KM practice. For enterprises, knowledge has become their survival niche and sustainable competitive advantage in organization. Therefore, it is essential to identify the organizational culture conditions of knowledge management.

### 3. Evaluation Method

#### 3.1. The Dematel

DEMATEL method (Decision-making Trial and Evaluation Laboratory) indicates relations among criteria and is used for the central criterion identification the important factors. To guide DEMATEL method, after collection of potential factors in KM, the experts' judgment is used and 14 respondents are used in some studies.

Furthermore, DEMATEL is not only used to obtain the influence levels of each element over others but also has been applied to detect complex relationships and build an impact-relation map of the criteria [8]. For clarification, the primary DEMATEL technique is explained as follows.

Step1: Evaluation the direct influence between each two factors (i and j) by experts from 0 to 4 representing the range from "non-influence" to "very high influence".

Step 2: Normalize the direct-relation matrix based on the direct-relation matrix A, the normalized direct-relation matrix X will gained via formulas:

$$X = kA \tag{1}$$

$$k = \frac{1}{\max_{1 \leq i \leq n} \sum_{j=1}^n a_{ij}} , \quad i, j = 1, 2, \dots, n \tag{2}$$

Step 3: Gain the total-relation matrix, once the normalized direct-relation matrix X is calculated, the total relation matrix T was obtained, in which I is identity matrix.

$$T = X(I - X)^{-1} \tag{3}$$

Step 4: To express the structural relationship among the criteria of cause and effect and keep the complexity of the system to a manageable level [36].

#### 3.2. Data Analysis

The findings resulted of criterions from step by step methodology implementation is showed as following:

- C1: Knowledge acquisition
- C2: Knowledge dissemination.
- C3: Knowledge innovation
- C4: Supportive culture.
- C5: Innovative culture
- C6: Bureaucratic culture.

### 3.3. Table

Table 1. Normalized Direct-Relation Matrix.

Dimension	C2	C4	C3	C5	C1	C6
C2	0	0.214	0.191	0.136	0.146	0.077
C4	0.214	0	0.187	0.132	0.101	0.105
C3	0.205	0.196	0	0.105	0.100	0.091
C5	0.196	0.187	0.141	0	0.127	0.114
C1	0.200	0.168	0.142	0.106	0	0.091
C6	0.182	0.173	0.155	0.114	0.101	0

Table 2. Total Relation Matrix.

Dimension	C2	C4	C3	C5	C1	C6
C2	0.485	0.640	0.576	0.430	0.426	0.323
C4	0.647	0.451	0.561	0.418	0.384	0.336
C3	0.619	0.593	0.385	0.383	0.369	0.314
C5	0.650	0.622	0.540	0.312	0.415	0.352
C1	0.620	0.577	0.512	0.385	0.281	0.316
C6	0.616	0.590	0.531	0.399	0.378	0.238

The ranking for affection based on Table 2 is presented in Table 3.

Table 3. The Ranking of Dimension.

Dimension	R (sum)	C(sum)	R+C	R-C	Ranking
C2	2.883	3.830	6.433	-0.285	4
C4	2.800	3.650	6.802	-0.735	5
C3	2.666	3.270	6.447	-0.821	6
C5	2.893	2.568	6.023	0.1507	3
C1	2.693	2.462	5.195	0.5459	2
C6	2.753	2.032	5.170	0.7014	1

Relation (R-C) and prominence (R+C) were used for classification. A description is provided in Table 3.

### 4. Discussion

We have argued that Knowledge Management helps in Organizational Development, while discussing about its implications practically that we can observe we have to implement it in organization. Future research should also examine the benefits from KM associated with changing an organization's culture, and increasing this organization's knowledge transfer benefits. Indeed, it may be more beneficial for managers to learn how to develop knowledge management strategies that attempt to overcome obstacles created by their cultures. That is the reason why leader should attempt to create internal changes to make their concerns more conducive to knowledge transfer.

### 5. Conclusion

The knowledge management aspect includes C1 "knowledge acquisition", C2 "knowledge dissemination" and C3 "knowledge innovation". From the results can be found in the knowledge management dimension: Criteria "knowledge acquisition" directly affects "knowledge dissemination" and "knowledge innovation".

From the perspective of the overall impact of KM, the C1 "knowledge acquisition" has the highest overall impact. Therefore, C1 "knowledge acquisition" has become the most important influence factor in the KM. It is also the most

critical factor for knowledge management decision-making. If the distributor wants to improve KM, knowledge acquisition is the ultimate source of influence, and priority should be given to the improvement of knowledge acquisition, which can affect the overall knowledge management performance.

From the overall structure of the organizational culture C6 "bureaucratic culture" is the most influential factor in knowledge management, and it is also the most critical factor for KM decision-making. In order to improve organizational culture and make decisions, C6 "bureaucratic culture" is the source of influence, C4 "supporting culture" is the ultimate source of influence, and priority should be given to the improvement of bureaucratic culture. It is also found that C6 "bureaucratic culture" has a direct impact on the C4 "supporting culture", which is indirectly affected by the C5 "innovation culture", in which "innovative culture" is a hidden factor of bureaucratic culture that affects supportive culture. When the leader wants to improve internal standards of the firms, they cannot only attach to the factor of bureaucratic culture. Meanwhile, it should improve the comprehensive of hidden factor of innovative culture in firms.

We found that "bureaucratic culture" as the largest factors, and "organizational culture" as the dimensions of the main influence, "Organizational innovation" as the main facets is affected. In this study, the following conclusions sorted out: First, enhance the organizational support culture to help a direct impact on the value of innovation distributor. Second, enhance the value and absorb new knowledge with sophisticated strategy to encourage innovation and further up to full advantage. Third, enterprises should encourage practitioners realizing the important aspect of KM initiatives to facilitate knowledge creation, capture, representation, storage, and sharing are efficient use by organizational culture.

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