

THE PRESENT AND PREFERRED CULTURE FOR PROJECT ORGANIZATIONS: INVESTIGATION BASED ON THE COMPETING VALUES FRAMEWORK

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Abstract. *The topic of culture has received increasing attention not only in the management literature (Deal & Kennedy, 2000; Schein, 2010; Alvesson, 2013) but also in the project management literature during the last few years (Wiewiora et al., 2013). Although a considerable amount of research has investigated organizational culture, less research has been conducted on the comparison of present and preferred cultures in project context. This paper aims to fill this gap by focusing on project managers and on the investigation of the present and the preferred culture profile of their project organizations. Based on Cameron and Quinn's (2011) Competing Values Framework (CVF) using the Organizational Culture Assessment Instrument (OCAI) a quantitative survey was conducted. The questionnaire used gathered data from project managers working in various industries and organizations. The sample consisted of 695 respondents. The empirical study focused on categorizing project organizations based on their developed present culture profile and revealing the difference between the present and preferred culture profiles. The study hypothesizes that four project organization groups can be revealed based on their dominant orientation. That is the domination of one of the four culture types of Cameron and Quinn's framework (Clan, Adhocracy, Hierarchy, or Market cultures). To test this hypothesis cluster analysis was used. The study also hypothesizes that the present and preferred culture profiles of project organizations do not show significant difference. To prove this statement paired samples t-test was chosen. The results showed that instead of four groups of project organizations with one dominant culture, there are only three project organizations with the domination of one culture type: a project organization in which Clan culture type dominates, a project organization that has a dominant Market culture type and one with a dominant Hierarchy culture type. No project organization group was revealed characterized by the dominance of Adhocracy culture type. Continuing the investigation with these three project organizations, the present and preferred project culture profiles were compared. The results showed that in all three cases (project organizations) there are differences between the present and preferred project culture profiles. These differences are manifested mainly by the change of the dominant culture type but the remaining culture types determining the culture profile of the project organizations also show differences.*

Keywords: *organizational culture; project manager; project organization; change; CVF.*

Introduction

Projects appear in various parts of our lives from highways, railroad constructions through software, product or service development till sport events and cultural gatherings. Knowing this requires the knowledge of the methods and techniques used during the planning and realization of projects. On the other hand, since project team members are gathered together temporarily the project organization develops its own culture. Cultural aspects have significant effect on the development and utilization of competencies being indispensable in the achievement of favorable market positions as well (Gaál et al., 2009). Taking these into consideration, after the introduction, we structure this paper in the following sections. First, we introduce project, project teams and organizational culture. Next, we present the research framework and the sample of the study. Then, the hypotheses and the chosen method are demonstrated, which is followed by the interpretation of the findings of the study. Finally, before the conclusion, the last section deals with the practical application of the results.

Project and project teams

Time, task, team and transition are four concepts illustrating how projects differ from other organizational form types. If we look at projects from an organizing perspective it can be perceived as a non-linear process during which things take place between the project start and end (Lundin & Söderholm, 1995). Being considered unique appears in having a unique task or solution thus it has no ready-made solutions and this causes uncertainty in projects (Hallgren & Maaninen-Olsson, 2009).

Kerzner (2006, p.2) stresses the importance of objective when defining a project which according to him “can be considered to be any series of activities and tasks that have a specific objective to be completed within certain specifications (time, cost, quality)” while Gareis (2005, p.41) states that a „project is a temporary organization for the performance of a relatively unique, short-to medium-term strategically important business process of medium or large scope”.

A project team plays an important role in project success. Based on the general team definition of Katzenbach and Smith (1993), project teams can be defined as temporary organizations containing a small number of people with complementary skills who are committed to the project’s purpose, a set of project goals, and a common approach for which they hold themselves mutually accountable. Aggteleky and Bajna (1994) differentiate between core-team and temporary-team members. While core-team members participate in the whole project process from the beginning to the end, temporary-team members are specialist who enter into the project at a well-defined moment and work on the project for a certain time period based on the project time schedule (Figure 1).

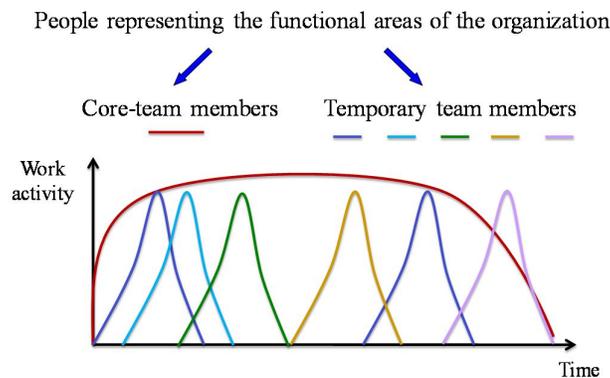


Figure 1. Project team members (based on Aggteleky & Bajna, 1994)

Managing a project team is the process for "... tracking team member performance, providing feedback, resolving issues, and coordinating changes to enhance project performance" (PMI, 2013, p.199). The main task of this process is “to observe the team behavior, to manage conflicts, to resolve issues, and to appraise team member performance” (PMI, 2013, p.215). The expectations towards employees working in project organizations are also high especially regarding co-operational skills: they should be able to work well in teams, and to lead and maintain close ties with others outside the project organization (e.g. with other organizational members) (Pant et al., 1996).

Project managers face a big challenge: while leaders of traditional organizations have longer time to create, develop and change the organizational culture, project managers have to concentrate on project goals and expected project results and less attention is paid and less time is given to the culture of the project team.

Since the integrative perspective on organizational culture gave rise to academic discussions (Smircich, 1983, Archer, 1988, Martin & Meyerson, 1988) it is suggested by Henrie and Souza-Poza (2005) that project managers should look for information on project culture. Thus in the following, organizational culture and different organizational culture types are introduced.

Organizational culture

The phenomenon when "organizations have their distinctive ways of solving problems, treating employees, passing the traditions, etc.." is called organizational culture by organizational and management sciences" (Heidrich & Chandler, 2011, p.667). According to Cheung et al. (2011, p.33) an "organizational culture gives identity to an organization". Schein (1990) believes that new organizational members need to be taught about organization culture and considers it as shared values and beliefs that guide behavioral norms in an organization. Kono (1990) also stresses the importance of shared values as one of the three elements of organizational culture besides decision-making patterns and overt behavior patterns. Organizational culture can also be considered as a way of shaping members' behavior (Grey, 2009) however Smircich (1983) argues that interpreting it is influenced by one's assumptions. Alvesson (1993) considers culture rather a dynamic concept than a static one since there is a change in time in the project environment, management focus, and partners. Martin (2002) uses three classifications to describe organizational culture: analyzing the content themes (espoused and inferred cultural values), mapping the formal and informal practices (rules, rules, procedure, and management styles), and analyzing cultural forms (describing physical arrangements, stories, rituals, humor, myths, and heroes).

Literature provides several categorization of organizational culture being presented as follows. In Kono's (1990) classification of culture types three axes that are related to performance and employee satisfaction were used: innovative vs. conservative, analytical vs. intuitive and social distance between hierarchy levels. Based on their combination five culture types were identified that are Vitalized, Follow the leader and vitalized, Bureaucratic, Stagnant, Stagnant and Follow the leader. While Handy (1993) by addressing the organizational phenomena that contribute to the successes and downfalls of business organizations used four types of culture to describe organizational culture, namely Power, Role, Task and Person cultures. These provide a framework for understanding organizational culture. Trompenaars and Hampden-Turner (2002) also define four types of cultures but based on their aspects of organizational structure that are the general relationship between employees and organization, the vertical and hierarchical system of structure, and the general view of employees about the organization's goals. Taking these into consideration two dimensions (equality-hierarchy, and orientation to person or task) were used to distinguish four culture types: Incubator, Guided missile, Family, and Eiffel tower culture. According to Cameron and Quinn (2011) organizations are seldom characterized by a single cultural type and thus tend to develop a dominant culture over time as they adapt and respond to the challenges and changes in the environment surrounding them. They used the Organizational Culture Assessment Instrument (OCAI) to develop a measurement of organizational culture. The Competing Values Framework (CVF) aiming to find the most important criteria and factors for effective organizational operation was the basis for OCAI (Quinn & Rohrbaugh, 1981). This CVF developed by them allows an assessment of a dominant culture across six key cultural characteristics (dominant characteristics, organizational leadership, management of employees, organizational glue, strategic emphasis and criteria of success). It also recognizes the complex nature of culture based on two primary dimensions. The first dimension is related to formal-informal organizational processes and the extremes of this continuum represent the competing demands of flexibility and discretion versus stability and control. On the other hand, the second dimension reflects the conflicting demands of the internal organization and the external environment. Thus on the one end of this continuum the focus on internal integration, organizational processes, and structural stability and control appear, while on the other end the emphasis on competition, interaction with the environment, and a focus on outcomes. These dimensions create four quadrants representing four culture types: Clan, Adhocracy, Hierarchy and Market (Figure 2). This Framework also enables the mapping of preferred culture types besides the present ones (Cameron & Quinn, 2011).

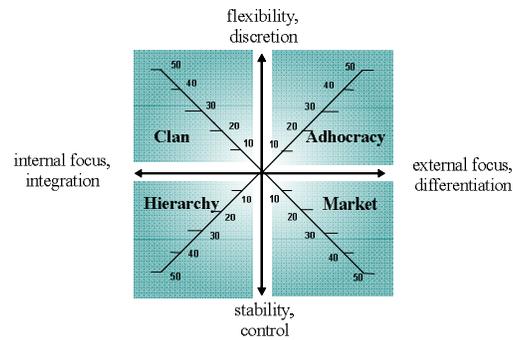


Figure 2. The four culture types (based on Cameron & Quinn, 2011)

This Framework was chosen for a number of reasons. Firstly, the model allows for the simultaneous existence of a number of different culture types within an organization, which is more suited to the project work. Secondly, previous studies have confirmed that CVF has already been used to measure organizational culture's relationship with various variables (Balogh et al. 2011; Bogdány, 2014; Bognár, 2013; Chandler, 2014; Ferreira, 2014; Wiewiora et al., 2013). Thirdly, the instrument developed shows current perceptions in comparison with preferences in the organization, thus gives an additional dimension of organizational values and perceptions.

Research framework and research sample

The Strategic Management Research Group at University of Pannonia, Veszprém started a study in 2014 investigating project organizations of various sizes. As members of the Research Group we were involved in the development and implementation of “Project management in the XXI century” questionnaire as well.

One of the purposes of the research study was to categorize project organizations in Hungary based on their developed present culture profile and to reveal the difference between their present and preferred culture profiles. Based on this purpose the study aimed to answer the following questions:

Question 1: How many groups of project organizations can be revealed based on their dominant culture orientation in Hungary?

Question 2: Is there a difference between the present and the preferred culture profiles of the revealed project organization groups?

The survey using the “Project management in the XXI century” questionnaire was conducted between 1st of March and 30th of September 2014. The questionnaire was available during this period and was sent out online and paper to organizations operating in Hungary. The participants of the survey were project managers. 695 questionnaires returned were analyzable. Table 1 lists the statistics on the characteristics of the organizations (for-profit/nonprofit, micro / small / medium / large) and the, number of project team members.

Table 1. Statistics of the research sample

Organization and project characteristics		N	%
All		695	
Sector	for-profit	540	77.7
	non-profit	155	22.3
Size	micro (1 - 9)	89	12.8
	small (10 - 49)	150	21.6
	medium (50 - 249)	152	21.9
	large (250 -)	304	43.7
Number of project team members	0 – 5	216	31.1
	6 – 10	275	39.6
	11 – 50	168	24.1
	51 –	36	5.2

According to the sector, 77.7 % of the organizations are for-profit and 22.3 % non-profit. 12.8 % of these organizations are micro, 22.3 % small-sized, 21.9 % medium-sized and 43.7 % large-sized. 70.7% of the projects have less than 10 project team members, while 29.3 % have more than 11 project team members.

The hypotheses, the chosen method and the findings

Based on the research questions the following hypotheses are put forward for testing:

Hypothesis 1: Four groups of project organizations can be revealed based on their dominant culture orientation. Project organizations with the domination of Clan, Adhocracy, Market, and Hierarchy culture types.

Hypothesis 2: There is no difference between the present culture profiles versus the preferred culture profiles of the revealed project organization groups.

The first hypothesis assumes that based on the project managers' perception of the culture profile of their project organizations one of the four culture types will be more dominant than the others. While the second hypothesis is based on the result of the first one and assumes that the preferred culture profile of the project organizations does not differ from the present (current) culture profile they developed together and having the domination of one culture type.

As the basis for the investigation a questionnaire including questions based on the OCAI of Cameron and Quinn (2011) was used. Within these questions four statements belong to each of the six key characteristics (dominant characteristics, organizational leadership, management of employees, organizational glue, strategic emphasis and criteria of success). To construct the culture profile of the project organizations the project managers were asked to divide 100 points over the four statements that correspond to the four culture types. The participants of the survey first filled in the 'now' column representing the present culture profile, after which they were asked to answer the 'preferred' column revealing the preferred culture profile for the future meaning that the culture in which they would like to operate in the future. The average score for each culture type is calculated by adding together the responses of each statements and dividing them by 6. This assessment method enables the measurement of the extent to which one of the four culture types dominates the culture profile. The higher the score is, the more dominant a certain culture type is. The method also allows comparison regarding the present and preferred culture types and by focusing on selected values changes in the culture can brought about (Cameron & Quinn, 2011).

To test the first hypothesis cluster analysis was used. The aim of cluster analysis is to determine which objects are similar and dissimilar, and categorize them accordingly (Holden & LeDrew, 1998). As typical requirements of clustering the following features can be mentioned: scalability, ability to deal with different types of attributes, discovery of clusters with arbitrary shape, minimal requirements for domain knowledge to determine input parameters, ability to deal with noisy data, insensitivity to the order of input records, high dimensionality, constraint-based clustering, interpretability and usability (Gupta, 2008; Han & Kamber, 2006; Pujari, 2001).

Regarding the clustering algorithm, we used K-means clustering being one of the oldest and most widely used clustering algorithms. K-means clustering being a prototype based, partitional clustering algorithm attempts to find K non-overlapping clusters that are represented by their centroids being the means of the points within the cluster. During the K-means clustering process every point is assigned to the closest centroid, and thus the collection of points assigned to the centroid will thus form a cluster. The centroids are updated taking into account the points assigned to the given cluster. The clustering process of K-means is repeated until the points do not change the clusters (Wu, 2012). The results of the analysis are presented in Table 2 and Table 3.

Table 2. Number of Cases in each Cluster

Cluster	
Cluster 1	268
Cluster 2	164
Cluster 3	263
Valid	695

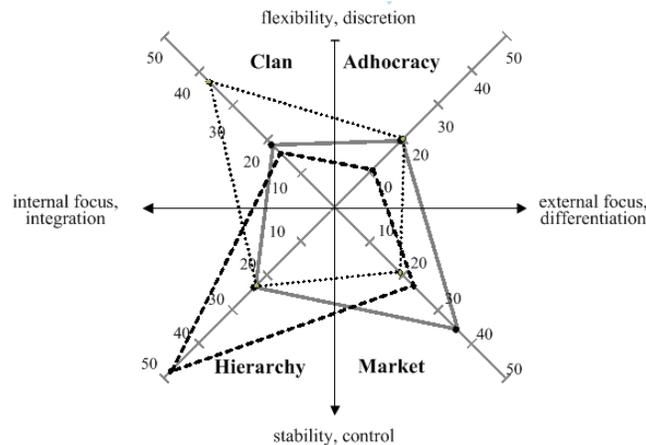
Table 2 shows that three clusters were formed by using the K-means clustering. The first cluster contains 268, the second 164, and the third one 263 cases.

Table 3. Final cluster centers of the project organizations

Culture types	Clusters		
	1	2	3
Clan	19	17	37
Adhocracy	21	11	20
Market	36	23	20
Hierarchy	24	49	23

Table 3 summarizes the final cluster centers of the project organizations. It can be seen that all three project organizations are not characterized by a single culture type. All four culture types are present in each project organization (cluster) but in all three clusters one culture type dominates (that is being highlighted).

Figure 2 represents the culture profile of the revealed three project organization groups based on Cameron and Quinn's (2011) framework.

**Figure 2. Project organization groups based on their culture profile**

The results show that instead of four groups of project organizations with one dominant culture, there are only three groups of project organizations with the domination of one culture: a group of project organizations in which Clan culture type dominates, project organizations that have a dominant Market culture type and one group with a dominant Hierarchy culture type. The analysis did not reveal any group of project organizations characterized by the dominance of Adhocracy culture type.

Clan culture type is like an extended family and is considered a friendly place to work. Loyalty holds the organization together. Empowerment and facilitation of participant and their commitment is important. On the other, hand Market culture type is a result-oriented workplace, where market leadership is important and winning holds the organization together. Competitiveness and productivity are mentioned as core values and are achieved through emphasis on external positioning. Hierarchy

culture type, where procedures govern people, is a formalized and structure place to work. The glue that holds the organization together is based on formal rules and policies (Cameron & Quinn, 2011).

Based upon the findings the first hypothesis is partly accepted and the following thesis could be stated. *Thesis 1:* Three project organization groups can be revealed based on their dominant culture orientation. A project culture profile with the dominance of Clan culture type, and another in which the Market culture type dominates and one that has a dominant Hierarchy culture type.

Regarding the second hypothesis we used paired samples t-test to measure that there is no difference between the present culture profiles versus the preferred culture profiles of the three revealed project organization groups. We found this test appropriate, since it is used when two groups of values are related or connected to each other (Rubin, 2010) as the present and the preferred culture types of the project organizations in this case.

Table 3 displays the results related to the paired samples t-test comparing all present and preferred culture types of the three reveals project organization groups (with Clan, Market, and Hierarchy domination).

Table 3. Paired Samples Test

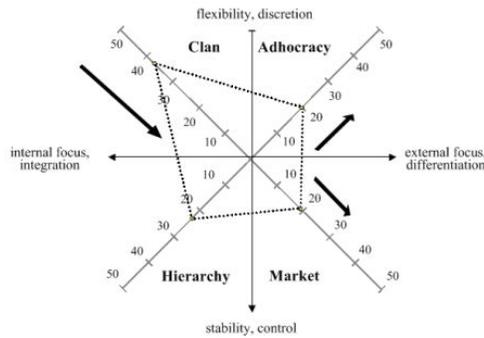
		Paired Differences			t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Project organizations with Clan domination							
Pair 1	Clan (present) - Clan (preferred)	4,39924	8,28801	,51106	8,608	262	,000
Pair 2	Adhocracy (present) - Adhocracy (preferred)	-2,52852	5,76166	,35528	-7,117		,000
Pair 3	Market (present) - Market (preferred)	-2,33840	6,75551	,41656	-5,614		,000
Pair 4	Hierarchy (present) - Hierarchy (preferred)	,52471	6,95284	,42873	1,224		,222
Project organizations with Market domination							
Pair 1	Clan (present) - Clan (preferred)	-4,60448	7,29632	,44569	-10,331	267	,000
Pair 2	Adhocracy (present) - Adhocracy (preferred)	-3,29478	6,34988	,38788	-8,494		,000
Pair 3	Market (present) - Market (preferred)	7,04478	9,09942	,55584	12,674		,000
Pair 4	Hierarchy (present) - Hierarchy (preferred)	,80597	7,32394	,44738	1,802		,073
Project organizations with Hierarchy domination							
Pair 1	Clan (present) - Clan (preferred)	-6,51829	8,36035	,65283	-9,985	163	,000
Pair 2	Adhocracy (present) - Adhocracy (preferred)	-8,01829	7,48862	,58476	-13,712		,000
Pair 3	Market (present) - Market (preferred)	-2,14024	8,19912	,64024	-3,343		,001
Pair 4	Hierarchy (present) - Hierarchy (preferred)	16,67683	12,25493	,95695	17,427		,000

It can be seen that at all three cases the project managers would like to work in the future at project organizations where the features of the present dominant culture type would decrease most significantly (Clan: 4,4; Market: 7,0; Hierarchy: 16,7). This can be considered one of the most interesting results.

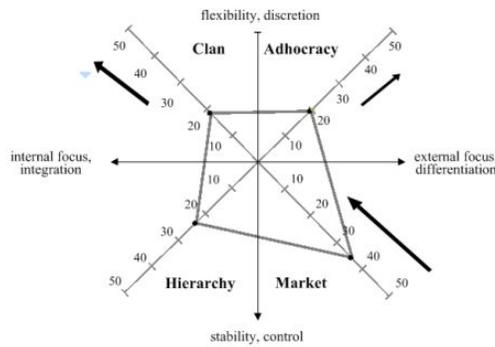
In Figure 3 the length of the lines symbolizes the extent of change concerning the given culture type. That is, although at the first group of project organizations the project managers prefer to work in a culture with the dominance of Clan culture type, but its extent of decrease is significant and twice as large as the extent of increase of Adhocracy and Market culture types in respect of the preferred culture profile. The change of the culture profile also shows that there is a movement towards external focus and differentiation. This shows that they wish to be more effective by focusing on interaction and competition with those being outside their organizations (Cameron & Quinn, 2011).

Concerning project organizations with dominant Market culture type the preferred culture profile in this case is also characterized by the dominance of Market culture type, but the extent of change shows that the most significant change (decrease) takes place regarding the Market culture type. This is

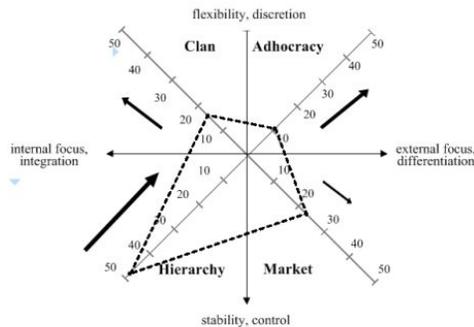
followed by the significant increase of Clan culture type, while the smallest change can be seen at Adhocracy culture type. On the whole it can be observed that there is a different movement at these project organizations towards flexibility and discretion. Meaning, that they view themselves in the future effective if they are characterized by being changing, adaptable and organic (Cameron & Quinn, 2011).



Present culture type	Preferred culture type	Significant?
Clan 37,46	Clan 33,06	yes
Adhocracy 20,05	Adhocracy 22,58	yes
Market 19,48	Market 21,82	yes
Hierarchy 23,34	Hierarchy 22,81	no



Present culture type	Preferred culture type	Significant?
Clan 19,07	Clan 23,67	yes
Adhocracy 20,98	Adhocracy 24,27	yes
Market 36,02	Market 28,98	yes
Hierarchy 24,22	Hierarchy 23,41	no



Present culture type	Preferred culture type	Significant?
Clan 16,77	Clan 23,29	yes
Adhocracy 11,35	Adhocracy 19,37	yes
Market 23,57	Market 25,71	yes
Hierarchy 48,59	Hierarchy 31,91	yes

Figure 3. The change of project organization groups' culture profile

Regarding project organizations with Hierarchy domination the largest extent of change can be revealed related to the Hierarchy culture type. Comparing all three project organization groups the largest and the most significant decrease of the dominant culture type can be discovered here. The ranking of the remaining three culture types in respect to the extent of change is: Adhocracy, Clan and Market culture types. The movement shows a mixture of the previous two cases since at this culture profile there is a movement on the one hand toward flexibility and discretion and on the other hand towards external focus and differentiation as well.

Based upon these findings the second hypothesis is rejected and the following thesis could be stated.

Thesis 2: There are differences between all present and preferred culture types at project organizations with Hierarchy domination, while concerning project organizations with Clan and Market domination difference can only be revealed regarding three culture types and in the remaining one there is no difference.

Practical application

Creating an effective project organization is always one of the biggest challenges for project managers. In case of normal organizational operation there is more time to plan a change management program in order to create the most desirable organizational culture. However project managers do not have the occasion to carry out any kind of change management program related to cultural changes. The result of our study shows that the preferred culture of a project organization should be a balanced one. Projects are complex, complicated one-time processes and these characteristics indicate the balanced feature of the culture of the project organization (Szabó, 2012, p.4). The project should focus on the external environment as well as on the internal integration and at the same time should have a certain degree of stability but should also provide the potential for flexibility. Once the culture has a dominant dimension the project manager and the project team face an imbalanced situation and the need for a balanced culture arises. In this culture effective knowledge sharing can also occur (Óvári, 2004). If project managers are aware of this phenomenon before starting a project, they have better opportunity to design their project organizations and to recruit the appropriate project team members for it.

Conclusion

In this paper using the framework of Cameron and Quinn (2011) the culture profile of project organizations operating in Hungary was examined. The study on the one hand assumed that there are four groups of project organizations based on their dominant orientation and that the present and preferred culture profiles of these project organizations do not show significant difference. Based on Cameron and Quinn's (2011) CVF using the OCAI a quantitative survey was conducted. With a sample of 695 project managers the results showed that there are only three project organizations with the domination of one culture type: Clan, Market and Hierarchy culture types. Comparing the present and preferred project culture profiles the results showed that is a difference between the present and preferred project culture types at project organizations with Hierarchy domination, and at project organizations with Clan and Market domination three culture types show difference.

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