

# Importance and trends of organizational culture in construction in eastern Croatia

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# IMPORTANCE AND TRENDS OF ORGANIZATIONAL CULTURE IN CONSTRUCTION IN EASTERN CROATIA

## ABSTRACT

Organizational culture in the construction industry has not yet been fully investigated. Therefore, this paper examines the importance of organizational culture and its trends in the construction industry. The importance of organizational culture was analyzed in the first part of the paper using an extensive review of the relevant international and domestic literature. The remainder of this paper presents the results of an empirical study the authors have conducted in 2013 using the OCAI questionnaire among university students in the second year of graduate study at the Civil Engineering Faculty in Osijek. The aim of the study was to prove the importance of organizational culture in construction and to determine the organizational culture trends in the construction industry in eastern Croatia by identifying organizational culture that different groups of students are considering desirable for a company in which they would work after their studies.

The results show that an absolutely dominant desired type of organizational culture is clan (38.9%). After clan, an equally represented preference is towards innovative (adhocracy) and hierarchy organizational cultures since approximately a quarter of the students show a tendency towards these cultures. The least preferred is a market organizational culture (13.23%). In addition, the research has shown extremely high sample homogeneity in all categories examined.

In future studies it would be useful to conduct a similar analysis at other civil engineering faculties in Croatia, in order to perceive the organizational culture trend in whole Croatia.

**Keywords:** organizational culture, students, construction companies

## 1. Introduction

Organizational culture has been the subject of multidisciplinary research since the early 20th century, although in the context of organization and management in developed countries, especially in terms of business performance, this concept became dominant in the 1980s (Bellot, 2011). In our region, the study of organizational culture has intensified only in the last decade.

Since the concept of organizational culture combines several disciplines, primarily organization, psychology, sociology and anthropology, even its very definition is complex and many authors have tried to explain what it involves.

Organizational or corporate culture is a social property of an organization to which employees need to adapt because without it they cannot function within the organization. The simplest way to describe organizational culture is: a system of shared values, norms, beliefs, styles of behavior and performance, which distinguishes one organization from another (Sikavica, Bahtijarević - Siber, Pološki Vokić, 2008).

Authors Žugaj, Bojanic – Glavica, Brčić and Sehanovic in their book *Organizacijska kultura* (2004) reported an extensive review of definitions of organizational culture, from which they too concluded that organizational culture is a synthesis of beliefs, styles of behavior and performance.

Why would such an obviously social feature be important to the management of a company? In the not-so-distant history of organization and management, the academic community has promoted the dominance of external factors in the context of the definition of organizational success. The most famous among them is probably Michael Porter and his Five Forces Framework (Porter, 1980), according to which the achievement of sustainable competitive advantage depends on: the intensity of competition in a market (and the size of the market share), aspirants' threats (the existence of potential competitors and the existence of barriers to entry in this market), the existence of substitute products, bargaining power of buyers and bargaining power of suppliers. At that time, it was believed that management could and should fight with these forces primarily relying on the so-called "hard" elements of the organization, such as structure, systems, technology, capital, legal form of organization, and the like.

However, as globalization intensified competition, it soon became clear that these elements no longer suffice in the struggle to achieve business success. Therefore, scientists and professionals are increasingly turning to inner, "soft" organizational elements. These elements are always associated with people employed in a particular organization, because only human resources are resources that are not only valuable, but also rare, hardly replaceable and difficult to copy by potential competitors (Barney, 1991).

Moreover, it was found that sustainable competitive advantage depends not only on the nature of the resources at a certain point, but on their ability to be continually renewed, allocated and redefined in accordance with changes in the environment (Grant, 1998). Given that this ability is actually a sociological dimension and that it is closely related to the dominant corporate culture of each company, it is this very cognition that was essential for increased research of organizational culture in recent years.

## 2. The importance of organizational culture

Organizational culture is today considered one of the most significant determinants of the strategic development of an organization. From the managerial aspect, its most important function is in increasing individual and organizational success. In the literature, other specific functions of organizational culture are named (Sikavica, Bahtijarević - Siber, Pološki Vokić, 2008):

- it directs the decisions and behavior of management and employees,
- it is the main instrument of strategy implementation,
- it allows the vision of organizational development to become transparent and common to all members of the organization,
- it is the strongest organizational control system,
- it determines the image of the organization,
- it integrates the various subsystems of the organization.

Given the importance of the functions described above, it is important to question what the culture of a particular organization is. The answer to that question should consider both the intensity and the content of the culture.

As far as the intensity, the most common is a division of the strong and the weak culture. For strong cultures, it is characteristic to have a clear set of values and norms that a majority of employees is familiar with and that is accepted by most members of the organization. As such, strong cultures result in a similar style of approach to problems and behavior in general. In weak cultures there is no clear set of basic values (Daft, 2004).

Because of this, the strength of the organizational culture is usually inversely proportional to the existence of formal rules of behavior. "Unwritten rules" in strong cultures usually work better than would have been the case with written procedures.

However, studies have shown that it is not enough to have a strong culture, but its content is also essential for the success of the company. It is possible that a strong culture directs the organization in the wrong direction. In such a case, the culture would be in fact a source of organization's weakness and potential failure. Therefore, its content matters a great deal, which imposes two criteria of the functionality of organizational cultures (Sikavica, Bahtijarević - Siber, Pološki Vokić, 2008; Daft, 2004): culture must be strategically relevant and must have the ability to adapt to changes in the business environment.

When analysing different types of organizational culture, many different categorizations can be found in the relevant literature. The most important authors who have dealt with the organizational culture typologies are certainly Gert Hofstede (Hofstede, Hofstede, Minkov, 2013), Cameron and Quinn (Cameron, Quinn, 2005), Charles Handy (Handy, 1993), Deshpande and Webster (Deshpande, Webster, 1989), Trompenaars and Hampton - Turner (Trompenaars, Hampden - Turner, 1993) and others.

Regardless of the differences in typologies arising from different criteria, all authors emphasize the importance of organizational culture as well as its intangibility being one of the main causes of its complexity.

Professor Edgar Schein (Schein, 1992), one of the first and considered by many the most important researcher of organizational culture, presented organizational culture as the model that consists of three cognitive levels:

1. behaviour as an external manifestation of culture,
2. values,
3. underlying assumptions.

Only the behaviour is the visible part, but the other two hardly recognizable parts are actually determinants of the culture and *modus operandi* of the entire company. This is the main reason why culture is difficult to be identified, managed and revised as necessary.

Nevertheless, there is a consensus among scientists that from the managers' perspective, organizational culture is of great importance for business strategy and it must be managed in order to serve that strategy implementation (Žugaj, Bojanic - Glavica, Brčić, Sehanovic, 2004).

As such, organizational culture is a key determinant of sustainable competitive advantage, long-term effectiveness and success of the company (Cameron, 2004; Cameron Quinn, 2005). Of course, effective management of organizational culture must take into account the specific characteristics of individual industries. Therefore, this paper investigates the management of organizational culture in one chosen industry, and that is construction.

### 3. Previous studies of organizational culture in construction

One of the basic characteristics of construction is that it is a labor-intensive industry. Of course, the efficiency of construction enterprises is ultimately viewed through profits resulting from realized projects in a given period. However, one must not forget that those results depend on the work of the right people in the right place, as well as on the efficiency of communication through a complex web of different lines of responsibility.

Furthermore, in recent times construction has been exposed to intense business globalization, and in the international context, the understanding of culture and its diversity becomes even more important. Therefore, the ability to manage culture in construction has become a kind of risk management: managing corporate culture reduces the risk of misunderstanding the different styles of communication and behavior, thus reducing the likelihood of dissatisfaction of some of the entities involved in a particular construction project (Tijhuis, 2012).

There are not enough studies to ensure the basis for a complete understanding and the quality management of organizational culture in construction, especially in transitional countries such as Croatia, which have undergone drastic political and economic transformation (Ozorovskaja, Voordijk, Wilder, 2007).

Nevertheless, it was confirmed that organizational culture in construction is significantly different from corporate culture in other industries. Its specificity arises from the basic characteristics of the construction industry: dislocation of individual organizational units of construction companies due to the project nature of work, the dynamic nature of project management, the constant mobility of employees, a large proportion of seasonal workers, a large number of different subjects (designers, contractors, supervisors ... ) that work together on the same project, and who share the completion of the project as the common goal, but at the same time each entity has its own objectives, which are often in conflict with the goals of other subjects (Riley, Clare-Brown, 2001).

In order to encourage thinking about the real causes and effects of many problems in the construction industry, British professors Andrew Dainty, Stuart Green and Barbara Bagilhole edited and published the book, *People and Culture in Construction* (2007). The book is actually a collection of notable scientific papers related to organizational culture in construction, covering various aspects of culture: recruitment, management of cultural diversity and current issues related to the increased mobility of construction workers within the European Union.

Vaughan Coffey, a professor at the Technical University of Queensland in Brisbane, Australia, also emphasizes the importance of organizational culture in construction companies. In his book, *Understanding Organisational Culture in the Con-*

*struction Industry* (2010), Coffey provides an extensive review of scientific studies in the field of organizational culture in construction, but also includes important professional notes, arising from his professional experience.

Probably the most systematic approach to the study of organizational culture in the construction industry has been organized within the international organization called the International Council for Research and Innovation in Building and Construction (CIB), specifically in unit TG23 - Culture in Construction. The unit was established in the late 1990s in order to intensify and coordinate efforts in scientific research of organizational culture in construction, because culture was identified as the most important reason for specific problems characteristic of the construction industry (Fellows, Seymour, 2002). With the culture of the construction industry becoming an increasingly influential theme, TG23 received more prominence within the CIB organization, and in 2006, it grew into a working commission W112 - Culture in Construction ([www.cibworld.nl](http://www.cibworld.nl)). Under the auspices of that working commission, the most important scientific papers related to culture in construction are published or presented.

Nowadays, scientists are exploring different aspects of organizational culture in construction: the differences among the main participants in the construction process, the differences due to the type and size of construction companies, the differences arising from the existence of several demographic groups in construction companies (groups categorized by sex, age, ethnicity, religion, etc.) and others.

Regarding differences in the organizational culture of individual construction companies, probably the most obvious are the differences that occur in international projects. In such projects, participating subjects are of different nationalities, coming from different political, legal, economic and cultural systems. That is why it is particularly important to understand and appreciate the differences in organizational culture when managing international construction projects (Ozorhon, Arditi, Dikmen, Birgonul, 2008; Chan, Tse, 2003; Low, Shi, 2001).

In addition to these differences arising from the mentality and national culture, so far the best-documented differences in organizational culture in construction are those depending on the type of the company. Studies have shown that, regardless

of the dominant culture type, contracting companies always prefer market-oriented organizational cultures in which only the operating result matters more than designer companies (Oney - Yazıcı, Giritli, Topcu - Oraz, Acar, 2007; Nummelin, 2006; Rameezdeen, Gunarathna, 2003). These differences often lead to problems in communication among members of these two groups.

Thus, the frequent conflicts between designers and contractors who participate in the same construction project result from not only different objectives, but also from a different approach to work and the different understanding of the relationships with business associates. All of these aspects are determined by their organizational culture (Ankrah, Langford, 2005; Akiner, Tjihuis, 2007).

Ankrah and Langford also determined cultural similarities between designers and contractors, but the areas where the two groups were most opposed, they singled out the following (Ankrah, Langford, 2005):

- organization of business activities within the business department i.e. by delegation to an individual as the one solely responsible,
- source of power that comes from contact with the management,
- mechanisms of control and coordination,
- the degree of formalization,
- type of employees,
- tolerance of uncertainty,
- the need for recognition,
- standardization of business tasks.

It is very important to accept differences in organizational culture as causes in the background of the conflict, because it is the only way to manage projects and keep the interests of all participants involved in balance. Therefore, that skill has already been mentioned as a risk management skill that increases the likelihood of improving the overall performance of construction projects and enterprises.

There are studies that show that the achievement of partnership through a balance of different interests and organizational cultures generates a positive effect on the success of the project (Cheung, Wong, Lam, 2012; Coffey, 2008; Ankrah, 2007, Zhang, Liu, 2006; Phua, Rowlinson, 2003).

Generally, organizational culture is considered the catalyst of the companies' performance. Sai On Cheung, Peter S.P. Wong and Anna L. Lam, in their study conducted during 2012 (Cheung, Wong, Lam, 2012), found out that from different cultural factors affecting the construction companies' performance, innovativeness is the most important. This means that in today's knowledge-based society, to achieve superior results and sustainable competitiveness in national and international context, construction companies should encourage creativity and support innovativeness of their employees.

In Croatia, the authors of this article also conducted a survey of the current organizational culture in construction companies and the results of this research will be published soon. However, in the context of this paper, there have been two research goals. The first goal has been to prove the importance of organizational culture in the construction industry through an extensive review of the relevant studies. The second goal is to analyze what the trends of organizational culture in construction in eastern Croatia are.

When thinking of trends, one should be aware that trend is defined as "the basic development tendency of a phenomenon" (Šošić, Serdar, 1995:173). Furthermore, it must be acknowledged that the organizational culture of a company is primarily formed by its highly educated employees who most often work at a certain management level and as such have the power to influence the values and basic assumptions that are respected. Appreciating the fact that organizational culture is a phenomenon built over a longer period of time, but also respecting what was previously said, the authors hypothesize that civil engineering students are the very population that will attain management positions in construction companies over time, and whose expectations and preferences of corporate culture are therefore important determinants of its development tendencies.

Organizational culture at civil engineering faculties in Croatia has been so far studied only in terms of their own culture. Miljenko Antić and his colleagues studied the organizational culture of the Faculty of Civil Engineering in Zagreb and especially the organizational culture of the Department of Construction Management and Economics of the same faculty. They found that the lecturers are moderately satisfied with interpersonal relationships, selection of new employees, opportunities for profes-

sional advancement and procedures of the Faculty. They are not satisfied with the existing system of values and they believe a clear set of rules should be defined for students (Antić, Cerić, Lazić, 2010; Antić, Cerić, 2008). This cognition was confirmed by Galić, Antić and Hanak (2013) in a study which compared the organizational culture of civil engineering faculties in Osijek, Zagreb and Brno, Czech Republic.

Students' expectations regarding organizational culture have not been investigated and the authors of this paper thought it would be worthy to determine what type of organizational culture students are considering desirable for a company that will hire them after their studies. Hereinafter, the results of our own empirical research conducted among students of the Civil Engineering Faculty in Osijek shall be presented.

#### 4. Empirical research of the preferred organizational culture of students of civil engineering

Creating a specific organizational culture of an organization is a more or less conscious process. Usually, organizational culture is initially determined by the founder of the company. However, as every organization is actually a dynamic entity existing in a changing environment, also the organizational culture is not a static concept. The task of management is to continuously develop and adapt the organizational culture to ensure its adequacy to elements of internal and external business environment (Cameron, 2004).

#### 4.1. Sampling and data collection

The most important internal element of a company are its employees. This is another reason why the expectations of final year students are important and why those expectations should be appreciated by the construction companies' management, wishing to ensure constant adaptation and evolution of the company in order to maintain and possibly improve the level of its business performance.

In addition, in the construction industry, the majority of highly educated engineers are working at one of the management levels, so it is likely that current students will work at a managerial position soon enough. Given that managers are the ones who primarily shape the organizational culture (Cameron, 2004), it is assumed that the students' expectations in this regard significantly influence the trend of organizational culture.

Therefore, the survey was conducted among full-time students of all majors in the final school year, which is the second year of graduate study in Civil Engineering in Osijek. The survey was completed by 63 students, which comprises 86.3% of the selected population. Seventeen respondents study at the Department of Hydrotechnics, 29 respondents study at the Department of Bearing Structures and 17 respondents study at the Department of Organization, Technology and Management in Construction.

**Table 1.**  
*Measuring instruments of organizational culture*

| Authors                      | Measuring instrument                                       | Year |
|------------------------------|--|------|
| Askansasy, Broadfoot, Falcus | Organizational Profile Questionnaire (OPQ),                | 2000 |
| Glover, Shames, Friedman     | Cultural Assets Profiles (CAPS),                           | 1994 |
| Gray, Densten, Sarros        | Organizational Culture Profile (OCP),                      | 2003 |
| Mauil, Brown, Cliffe         | Personal, Customer Orientation and Cultural Issues (PCOC), | 2001 |
| Cooke                        | Organizational Culture Inventory (OCI)                     | 1995 |
| Cameron, Quinn               | Organizational Culture Assessment Instrument (OCAI)        | 1999 |

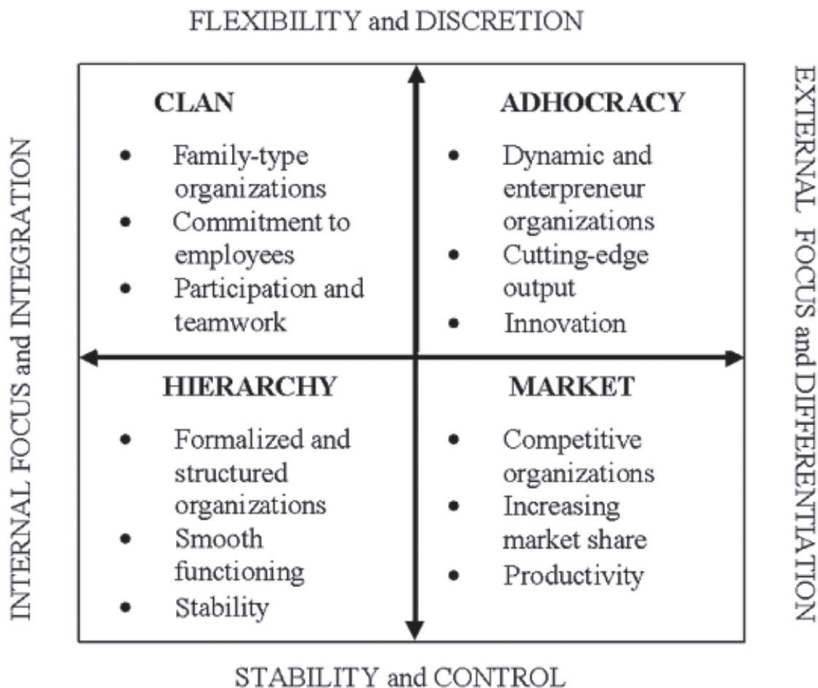
Source: Giritli, H., Öney-Yazici, E., Topcu-Oraz, G., Acar, E. (2013) "The interplay between leadership and organizational culture in the Turkish construction sector", *International Journal of Project Management* 31, p.231

#### 4.2. Methodology

Given the complexity of the organizational culture, scholars have developed several methods for its measurement. A review of the most relevant methods is presented in Table 1.

To explore desirable and expected organizational culture among students of the Civil Engineering Faculty in Osijek, the Organizational Culture Assessment Instrument (OCAI) was used, because the instrument is verified as reliable as in the construction industry, as well as in most other sectors of the economy (Cameron, Quinn, 2005). In addition, it is the most commonly used instrument within the CIB Working Commission W112 "Culture in Construction" (Giritli, Öney - Yazici, Topcu - Oraz, Acar, 2013).

*Figure 1. Matrix values and four types of organizational culture*



Source: Cameron, K. S. (2004), "A Process for Changing Organizational Culture," to be published in Michael Driver's (Ed.), *The Handbook of Organizational Development*, p.4



Acknowledging such a polarization of potential core values of the organization, the OCAI questionnaire analyzes the basic cultural characteristics of the organization through six dimensions (Cameron, 2004):

- dominant characteristics,
- organizational leadership,
- management of employees,
- organizational “glue”,
- strategic importance and
- success criteria.

Originally, the OCAI measured the current and desired state of the organizational culture of a company. However, this study measures only the desirable state of organizational culture, because respondents are not employees but students and it is hypothesized that their opinion is relevant to answer the fundamental research question of this study: what is the trend of organizational culture in construction in eastern Croatia.

In order to answer that question, the OCAI questionnaire was used following its recommended procedure ([www.ocai-online.com](http://www.ocai-online.com)). The questionnaire consists of six categories representing the key dimensions of organizational culture. In every category, respondents have been offered four alternative statements, each representing a different organizational culture.

The respondents have been asked to divide 100 points among these four alternatives in a way that the largest number of points should have been given to the alternative that is the most similar to what they see as the desired organizational culture of their future employment.

In the end, points from all of the six categories have been added together for each type of organizational culture separately. Those sums have been then divided by 6 in order to calculate the average rank of each culture type. The type with the highest score has been identified as the desired organizational culture of the sample. The results are presented hereafter.

### 4.3. Results

In the first step of the collected data analysis, some methods of descriptive statistics have been used to better learn the nature of the sample. The results of those analyses are shown in Table 2.

*Table 2. Frequency analysis*

| Respondents' characteristics | Frequency | Percentage (%) |
|------------------------------|-----------|----------------|
| Gender                       |           |                |
| male                         | 35        | 55.56          |
| female                       | 28        | 44.44          |
| Faculty department           |           |                |
| Hydrotechnics                | 17        | 26.98          |
| Bearing structures           | 29        | 46.03          |
| Organization                 | 17        | 26.98          |
| Desired future employment    |           |                |
| contractor                   | 25        | 39.68          |
| designer                     | 26        | 41.27          |
| other                        | 12        | 19.05          |
| Desired place of work        |           |                |
| Croatia                      | 31        | 49.21          |
| abroad                       | 32        | 50.79          |

*Source: Author*

In addition, data were analyzed regarding six cultural dimensions defined by the OCAI questionnaire, which resulted in differentiation of the surveyed students in four types of organizational culture: clan, adhocracy, hierarchy and market organizational culture. The overall results for all of the students and the results for specific categories of students are as follows:

1. categories according to the selected Faculty department,
2. categories based on gender,
3. categories according to the desired type of future employment,
4. categories according to the desired place of employment.

By analyzing the whole sample, it was found that most of the students in the second year of graduate study, namely 38.9% of respondents, preferred the clan as the type of organizational culture they would like to belong to after graduation.

This means that they aspire to work in a company whose success is primarily the result of employee loyalty, tradition and mutual cooperation of all employees. Interpersonal relationships in companies with the clan organizational culture are based on caring for people (Cameron, 2004; www.ocai-online.com). Because of this, members of the clan culture tolerate the stresses of everyday business more easily, even the low salaries. In the clan culture, employees respect each other: workers see their managers more as mentors and management tends to take into account the opinion of all employees when making business decisions. In such companies, there is an overall atmosphere of mutual respect and support, which is actually the main source of job commitment of employees and their effectiveness. These results are presented in Figure 2 and Table 3.

**Figure 2. Surveyed students' preferences of the future employer's organizational culture**



Source: Author

**Table 3. Relative preferences of the future employer's organizational culture**

| Desired organizational culture |           |        |           |
|--------------------------------|-----------|--------|-----------|
| Clan                           | Adhocracy | Market | Hierarchy |
| 38.90                          | 24.61     | 13.23  | 23.25     |

Source: Author

After the dominant clan culture, adhocracy and hierarchy are defined as the following: approximately equally desired organizational cultures. What are the main characteristics of these types of organizational culture?

Adhocracy or organizational culture based on innovation is characterized by a high degree of organizational flexibility and freedom of individuals. It encourages risk-taking and experimentation with new knowledge and technologies, which makes such companies dynamic, innovative, creative and highly entrepreneurial (Yesil, Kaya, 2012). Given that there are already mentioned (Cheung, Wong, Lam, 2012) studies showing that innovation is the most significant cultural element in terms of impact on the performance of construction companies, it is positive that a quarter of respondents want to work in an environment just like that.

Somewhat surprisingly, nearly a quarter of the students also have the tendency towards the hierarchy type of organizational culture. This shows that even in the construction industry, where the organic organizational structures, such as project and matrix structure, are increasingly replacing traditional hierarchical structure, way of thinking, yet of the youngest generation, does not follow that modern development imposed by the nature of work and foreign competition. Hierarchy organizational culture is just as good as any other culture type, but it is appropriate for activities where rigid forms and procedures are necessary. In the construction industry, much more valuable is individual thinking and ideas so even the higher education system should work and try to change this preference of future engineers, so as not to become a source of weakness of Croatian construction in global competition.

The smallest percentage of students surveyed, 13.23%, prefers the market organizational culture. That type of culture is characterized by the spirit of competition without mercy, in which success is measured only by the market share won and return on invested capital.

In addition, the literature proves that the market type is rarely a dominant organizational culture in construction, although there are studies showing that the majority of contractors choose that type, whilst the designers choose the clan culture (Rameezdeen, Gunarathna, 2003). Also, there are studies showing that even in cases when other cultural types are dominant, the market type is more preferred by contractors than by designers (Oney-Yazıcı, Giritli, Topcu-Oraz, Acar, 2007).

The low market type preferences are sometimes interpreted as a symptom of nations that traditionally value collectivism. Another explanation of such preferences may be attributed to the nature of state-business relations in Croatia.

**Table 4. Relative preferences of organizational culture types per different categories of civil engineering students**

|                                  | Desired organizational culture |           |        |           |
|----------------------------------|--------------------------------|-----------|--------|-----------|
|                                  | Clan                           | Adhocracy | Market | Hierarchy |
| <b>GENDER</b>                    |                                |           |        |           |
| male                             | 37.75                          | 24.64     | 14.70  | 22.92     |
| female                           | 40.36                          | 24.57     | 11.41  | 23.66     |
| <b>FACULTY DEPARTMENT</b>        |                                |           |        |           |
| hydrotechnics                    | 40.05                          | 22.05     | 12.37  | 25.53     |
| bearing structures               | 38.84                          | 25.13     | 13.13  | 22.90     |
| organization                     | 37.87                          | 26.28     | 14.28  | 21.56     |
| <b>DESIRED FUTURE EMPLOYMENT</b> |                                |           |        |           |
| contractor                       | 37.79                          | 23.53     | 13.73  | 24.95     |
| other                            | 42.12                          | 27.05     | 11.73  | 19.1      |
| designer                         | 38.49                          | 24.52     | 13.46  | 23.53     |
| <b>DESIRED PLACE OF WORK</b>     |                                |           |        |           |
| Croatia                          | 38.30                          | 22.40     | 13.28  | 26.03     |
| abroad                           | 39.50                          | 26.75     | 13.20  | 20.55     |

These relations are similar to those of some other transitional countries in a sense that the relations with government authorities (being one of the most significant investors in construction) determine the strategic decisions in companies rather than the market. Since contracting companies might find it difficult to survive in a fiercely competitive industry such as construction, due to a mismatch between their culture and environment, the preference adaptation should be encouraged.

Finally, the most interesting is that the results of this study show a distinct homogeneity of the tested sample so the results of certain categories correspond to the above presented results of the whole sample. Table 4 shows the relative preferences of different types of organizational culture by all tested categories of students.

The diagram in Figure 3 shows that although female students are extremely prone to a "family" atmosphere characteristic for the clan organizational culture, that culture type is truly dominant regardless of gender. Adhocracy and hierarchy culture types are approximately equally preferred by male and female students. Only the market organizational culture is somewhat chosen by male students rather than female students. The dashed line shows the preferences of girls and the solid line presents the preferences of boys.

Source: Author

**Figure 3. Diagram of differences in organizational culture preferences depending on the gender of the respondents**



Source: Author

As for the differences among students depending on the faculty department at which they study, they practically do not exist. The clan culture again shows a dominant position whilst other cultures recorded the aforementioned preference shares.

It is encouraging that such homogeneity repeated regardless of whether the respondents want to work as contractors or designers after their studies. Such results are somewhat different from those laid down by the aforementioned foreign studies, in which designers tend toward the clan culture and contractors prefer the market culture. However, it might actually be a future competitive advantage of Croatian construction, because the lack of difference should contribute to the success of communication among different entities involved in the same building project. Those subjects are primarily contractors and designers, who often enter into conflicts in the field, due to different ways of thinking.

Figure 4 shows the differences and similarities between students who want to work in Croatia (solid line) after their graduation or abroad (dashed line). This category of respondents once again repeats the clan culture domination. Therefore, a “by-product” of this analysis is much more interesting, because it reveals that actually more students want to leave their country and work abroad, rather than find employment in Croatia!

**Figure 4. Diagram of differences in organizational culture preferences depending on the desired place of employment**



Source: Author

## 5. Conclusion

The importance of the competitiveness of the Croatian economy is being increasingly emphasized, including the competitiveness of construction as an important segment. To achieve and manage this competitiveness it is extremely important to learn the trends of a specific industry and to adapt to them in a timely manner. One of these important trends is certainly an organizational culture. Therefore, expectations of the final year students regarding the organizational culture of their future employment are significant.

In the first part, this paper demonstrated the importance of organizational culture and through a systematic review of previous studies of organizational culture in construction showed its impact on various aspects of daily operations of construction companies.

Given the lack of research of organizational culture in Croatia, the second part of the paper presented the results of the authors' empirical research aimed to determine the trends in organizational culture in construction. The research based on the OCAI questionnaire was conducted among the final year

students at the Faculty of Civil Engineering in Osijek. The research established the dominant tendency of all categories of students toward the clan organizational culture, followed by an equal proportion of adhocracy and hierarchy culture. The least preferred was the market organizational culture.

The dominance of the clan culture is somewhat expected given the results of other countries mentioned in the paper. Construction companies in Croatia, as well as on the international market, obviously value the internal focus and flexibility of their organizations, resulting in a friendly workplace where leaders act like father figures.

Furthermore, the research also revealed a large sample of homogeneity. Such homogeneity could be used as a potential competitive advantage of Croatian construction, because it provides an opportunity for better communication of different subjects involved in the implementation of construction projects.

Additionally, given the fiercely competitive industry such as construction, high preference of hierarchy and low preference of market organizational culture types could lead to the situation in which some con-

struction companies might find it difficult to survive due to a mismatch between their culture and the environment. Therefore, the recommendation is that effort should be made in order to strengthen the tendency towards market organizational culture and to point out the limited admissibility of the hierarchy organizational culture in construction. This recommendation is addressed towards both the higher education system and the current management of construction companies.

There are only four civil engineering faculties in Croatia. Therefore, it has been assumed that the research sample consisting of students from one of those faculties is relevant enough to demonstrate the trends of organizational culture in construction in eastern Croatia and even to indicate the trends of the total Croatian construction industry. However, it would be very interesting to conduct future research regarding the preferences of students from other civil engineering faculties in Croatia. Those studies would supplement the results of the above presented research, thus providing information on the organizational culture trend in the Croatian construction industry as a whole.

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# **ZNAČAJ I TRENDOWI ORGANIZACIJSKE KULTURE U GRAĐEVINARSTVU ISTOČNE HRVATSKE**

## **SAŽETAK**

Organizacijska kultura u građevinarstvu još uvijek nije dovoljno istražena. Iz tog razloga ovaj članak proučava značaj organizacijske kulture i njezine trendove u građevinskoj industriji.

Značaj organizacijske kulture analiziran je u prvom dijelu članka korištenjem ekstenzivnog pregleda značajne svjetske i domaće literature. U ostatku ovoga rada prezentirani su rezultati vlastitoga empirijskog istraživanja koje su autorice provele tijekom 2013. godine primjenom OCAI upitnika među studentima druge godine sveučilišnog diplomskog studija na Građevinskom fakultetu u Osijeku. Cilj istraživanja bio je dokazati važnost organizacijske kulture u građevinarstvu i odrediti njezine trendove u građevinarstvu istočne Hrvatske identifikacijom vrsta organizacijske kulture koje različite skupine studenata smatraju poželjnima za poduzeće u kojem će se u budućnosti zaposliti.

Rezultati istraživanja pokazuju da među poželjnim vrstama organizacijske kulture apsolutnu dominaciju bilježi tzv. klan kultura (38,9%). Nakon nje, jednako su zastupljene preferencije prema inovativnoj i hijerarhijskoj organizacijskoj kulturi, pri čemu otprilike četvrtina ispitanih studenata teži svakoj od tih vrsta kulture. Najmanje je željena tržišna organizacijska kultura (13,23%). Dodatno, istraživanje je pokazalo izuzetno visoku homogenost uzorka u svim analiziranim kategorijama.

Preporučuje se budućim istraživanjima detaljnije ispitati preferencije studenata na preostalim građevinskim fakultetima u Hrvatskoj, kako bi se spoznali trendovi organizacijske kulture u građevinarstvu na nacionalnoj razini.

**Ključne riječi:** organizacijska kultura, studenti, građevinarstvo