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Organizational Culture as a Determinant of Construction Companies' Competitiveness: Case Study of Croatia

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Additional information is available at the end of the chapter

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Abstract

The aim of this chapter is to assess the organizational culture in construction industry in Croatia. The introductory part of the chapter highlights the purpose of the study presented in terms of learning the characteristics of the current and preferred organizational culture of the Croatian construction industry as well as understanding the relationship between the culture and competitiveness. Being a transitional country, Croatia is facing the need for behavior change of companies seeking competitive advantage, especially after becoming a part of the united European market. In a labor-intensive business like construction, adaptation of companies strongly depends on the underlying values and assumptions of their employees. Therefore, change management implies a need to learn about culture profiles. Results of the conducted research reveal culture profiles within construction industry in Croatia in respect of the size, core business, regional orientation and ownership of the analyzed companies. The preferences of existing engineers together with expectations of Generation Y have been also considered in order to anticipate the trends and necessary changes of organizational culture in construction industry in Croatia. Finally, findings of the cross-country analysis of culture's implications on competitiveness will be presented, proving that culture's role should be considered by decision makers trying to improve competitiveness.

Keywords: organizational culture, competitiveness, construction industry, trend, Croatia

1. Introduction

Human behavior is significantly determined by organizational culture. As one of the biggest authorities in the field says, organizational culture is a reflection of the basic assumptions

shared by members of a group, which defines the group's view of itself and its environment as well as its way of performing daily activities [1]. It should be emphasized that in terms of organizational culture, group can stand for a nation, an industry segment, a company or any other relatively stable social construct. However, there are authors pointing to differences between organizational culture and national culture. Although there is a consensus that culture is always about sharing collective values and behavior by members of the group, national cultures differ mainly on the level of fundamental values, while organizational cultures alter more on the level of perfunctory practices and can be more manageable. As such, organizational culture is determined by the national culture [2–4].

At present, there is a growing interest in studying the relationship between the organizational culture and the company performance resulting from its competitiveness [5]. It seems that with the world economic globalization aggravating, organizational culture as a soft power has become a weapon used to seize the opportunity to meet the challenges and achieve sustainable competitiveness [6].

As in culture, the competitiveness is also being analyzed at different levels. Evaluated from the company level competitiveness, over sectoral to national and global competitiveness [7, 8], those levels in fact correlate with the abovementioned levels of culture. Since competitiveness is considered a key determinant for growth and new jobs creation, it is a concept that has been intensively discussed. World Economic Forum assesses the competitiveness of 140 economies in its Global Competitiveness Report [9], providing insight into the drivers of their productivity and prosperity. Those drivers are organized in 12 relatively independent pillars, but since all those pillars are very people-driven, it can be easily assumed that they are closely related to national and organizational culture.

In the light of the abovementioned facts, the purpose of this study is to learn the relationship between the culture and competitiveness as well as the competitiveness implications of the current and preferred culture profile characteristic of the Croatian construction industry.

In order to fulfill so defined purpose, several research objectives have been set:

- to determine which organizational culture types are currently dominant in Croatian construction industry and their subcategories
- to identify preferred organizational culture types by both engineers and engineers-to-be, in order to suggest the direction of the recommended organizational change
- to investigate if there are any culture dimensions that are statistically significantly associated with competitiveness and to what extend

There are several reasons making these goals worth studying. First of all, previous research [10] indicates that there is a significant correlation between a construction company's organizational culture and the company performance, but at the same time it implies the knowledge gap and the need for further analysis in order to present that correlation in more detail.

Furthermore, being a labor-intensive business, construction industry is especially sensitive to basic assumptions shared by project team members or any other critical group. That is why Wilco Tijhuis, joint-coordinator at working-commission W112 "Culture in Construction,"

part of the International Council for Research and Innovation in Building and Construction, said that the capability of handling the culture-issue within construction processes was a kind of risk-management tool because it reduced the risk of behavioral miscommunication [11].

Construction industry is indeed a group with a specific culture. It is mostly the result of a distinct business environment: geographically distributed nature of construction, dynamic nature of site management, highly mobile and itinerant work force, the large number of different companies and organizations that have to work together in a project (designers, contractors, supervisors, etc.) and a fixed duration of construction project [12]. Finally, construction industry has been exposed to intense business globalization recently, and in the international context, the need for understanding and appreciating the culture has become even more important [13–15].

After describing applied methodology, this chapter provides insight into characteristics of the organizational culture present in Croatian construction industry, followed by the findings of the expected culture change in the future, respecting the preferences of current and future engineers. The remainder of the chapter presents results of the cross-country analysis of competitiveness and culture correlation, while final conclusions are intended to make key lessons from the overall research more visible.

2. Research methodology and applied methods

The research presented in this chapter was in fact an extensive case study, conducted in several phases over the last 3 years. It was designed in a way to reflect all relevant aspects of the subject and purpose of this study. As a result, different scientific methods were applied.

The first phase was intended for the secondary data analysis. During that phase, scientific methods of analysis and synthesis of the relevant literature were used, followed by descriptive method and classifications of identified key issues, as well as compilation method with the aim of setting the more specific goals for the empirical part of the research. Findings from this research phase were used mostly in the introductory part of this chapter as well as for the interpretation of the later empirical results.

After secondary data analysis had pointed out the aspects whose research would give an additional value to the study through building the extant knowledge, the first empirical phase of the study was conducted. It was the analysis of organizational culture of the Croatian construction industry. There is a variety of measure instruments used to assess the organizational culture, out of which the Competing Values Framework and Organizational Culture Assessment Instrument (OCAI) have been adopted as methods for this study, because OCAI was verified as reliable in measuring organizational culture in construction sector [16].

As a measurement tool, OCAI is based on the Competing Values Framework, which was developed during the 1980s [17, 18] for assessing and profiling the dominant cultures of organizations. As shown in **Figure 1**, this framework is consisted of two dimensions: the first dimension measures organizational focus from internal to external and the second dimension differentiates a focus on flexibility, discretion and dynamism from focus on stability, order and control.

Such a dispersion of basic values results in four quadrants, each representing a distinct type of organizational culture: the clan, the hierarchy, the adhocracy and the market. Basic characteristics of specific culture types are also visible in **Figure 1**. Although different, it is important to emphasize that none of these types is dominant over the others, only some types can be more appropriate in a certain context [19]. However, recent research [20] shows that whichever culture type might be dominant, it exerts a positive influence on both internal (innovation competence and human relations) and external (profitability, growth and reputational assets) performance only if it is balanced, that is if there are no significant deviations of individual culture perceptions from the “average,” shared cultural value.

Speaking of OCAI itself, it identifies fundamental cultural aspects of the organization through six key dimensions [19]: the dominant characteristics, the leadership style, the organizational glue, the strategic emphasis, the criteria of success and the management of employees.

Each of the six key dimensions encompassed by OCAI has four alternative statements, representing the abovementioned different culture types. The study of organizational culture has been carried out by filling in the OCAI questionnaire, during which the respondents rated their organizations’ culture by dividing 100 points among those four alternatives in each dimension, depending on the extent to which each alternative was similar to their own organization. A higher number of points should have been assigned to the alternative that was the most similar to their organization. Finally, individual scores have been used as an indication of the consensual view of the organizational culture of the group tested.

For the purpose of researching organizational culture of the Croatian construction industry [21, 22], a two-round modified OCAI anonymous and online survey has been conducted: in

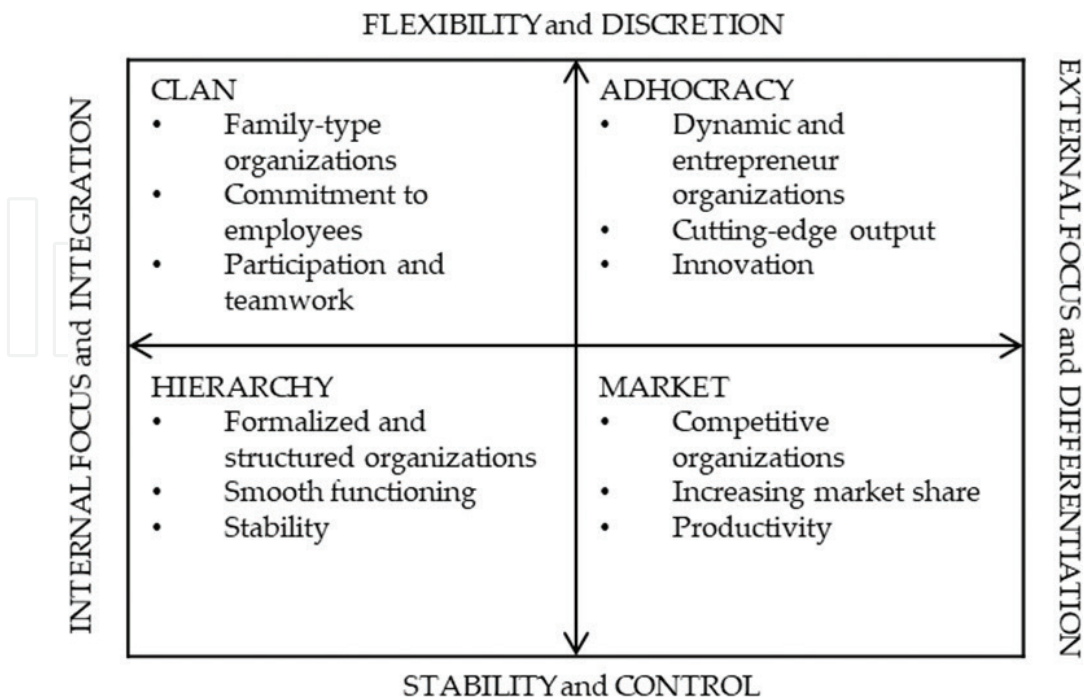


Figure 1. Competing values framework [17].

round 1, respondents assigned points in order to reflect the existing organizational culture of their organization, while in round 2, they assigned points to the same questions, but regarding the culture they would prefer. In that way, not just the current culture was assessed but also the insight into the preferred organizational culture was illustrated. Additionally, potential organizational change does not depend only on preferences of existing employees but also on the opinion of generations to come. OCAI was used also to test the preferences of the civil engineering students [23].

During the final phase of the case study presented in this chapter, methods testing the relationship of culture and competitiveness were used. Given the type of data collected, these methods were more quantitative than previously mentioned methods. In order to measure national competitiveness, the World Economic Forum has constructed the Global Competitiveness Index (GCI). GCI provides a weighted average of 114 indicators, grouped into 12 pillars of competitiveness, each of which reflects one aspect of the complex concept of competitiveness [9]. Therefore, the investigation [24] was conducted on a sample comprising participants of 64 countries, using GCI as correlation and ordinary least squares regression variables, to determine the relationship between national competitiveness, cultural dimensions and economic development. GCI scores reflecting the national competitiveness, were dependent variables, while Hofstede's culture dimensions [18] were adopted as independent variables and GDP per capita, indicating that economic development was treated as a control variable.

3. Culture profile of the Croatian construction industry

During the study of organizational culture of the Croatian construction industry [21, 22], OCAI was distributed to all construction companies registered in the Croatian Chamber of Economy. The respondents from construction companies were positioned as operative management level employees or higher, who could influence the organizational culture, at least within their own team and scope of work. In total, 108 valid responses were obtained from construction companies all over Croatia. Descriptive statistics of the sample is presented in **Table 1**.

It is interesting that the study [21, 22] results identified hierarchy as the dominant culture type of the sample. This means that construction companies in Croatia are mostly highly formalized and structured organizations. People are kept together by well-defined procedures and leaders are primarily good coordinators and organizers. Success depends on predictability and efficiency. In such organizations, people accept a hierarchical order in which everybody has a place and which needs no further justification. Hierarchy in an organization is seen as reflecting inherent inequalities, centralization is popular, subordinates expect to be told what to do and the ideal boss is a benevolent autocrat [25]. Average values of the current organizational culture types in Croatian construction companies are presented in **Table 2**.

Data regarding the culture types that are present in the Croatian construction industry were additionally tested using the Welch's version of t-test from the software package Statistica 12 [21, 22]. At the significance level 0.05, the test suggested that although dominant culture

Characteristic of the respondent	Frequency	Ratio (%)
<i>Gender</i>		
Male	71	65.74
Female	37	34.26
<i>Age</i>		
<30	13	12.04
30–40	45	41.67
40–50	30	27.78
50>	20	18.52
<i>Size of the company</i>		
<10 employees	16	14.81
10–49 employees	29	26.85
50–249 employees	42	38.89
250–499 employees	6	5.56
>499 employees	15	13.89
<i>Type of the company</i>		
Civil engineering contractors	35	32.41
Building construction contractors	17	15.74
Supervision	8	7.41
Consulting	14	12.96
Design	34	31.48
<i>Location of the company's head office</i>		
Eastern Croatia	49	45.37
Zagreb, central and north Croatia	18	16.67
Istria, Kvarner and Primorje	17	15.74
Dalmatia	23	21.30
Dubrovnik region	1	0.93
<i>Ownership of the company</i>		
Public	19	17.59
Private	89	82.41
<i>Ownership of the company</i>		
Foreign	10	9.26
Domestic	98	90.74

Table 1. Croatian construction industry sample's characteristics [22].

type of the sample is hierarchy, none of the culture types has an absolute domination over the population. However, such a major dominance of hierarchy culture type is bad for the overall competitiveness of construction industry. A recent study confirmed hierarchy culture

Culture type	Mean score
Clan	26.05
Adhocracy	18.50
Market	26.49
Hierarchy	28.96

Table 2. Current organizational culture in Croatian construction companies [21].

had a negative impact on organizational learning and therefore was considered as a barrier to innovation [26]. Another study [27] confirmed that there was no doubt that the innovation behavior was a key of the sustainable competitiveness. In fact, organizational culture stands out as the common element in implementing the innovation and development of competitive advantage, especially in organizations exposed to dynamic changes, seeking to adjust and to ensure their permanence in the market [28].

In addition, test confirmed that adhocracy culture was never a dominant culture type of the Croatian construction industry. That is amiss because an empirical investigation on effects of organizational culture showed that adhocracy culture has a positive effect on organizational learning, resulting in positive effects on technological and administrative innovation [26]. There are even some intra-profession studies [29, 30] verifying that lack of adhocracy characteristics harms the innovative behavior of construction companies, thus having a negative impact on their competitiveness and performance. Literally, innovativeness is the most important factor of all different cultural factors affecting the construction companies' performance [23]. Acknowledging all those findings, decision makers in Croatia should probably also consider the results [31] suggesting that government support could moderate adhocracy culture and its relationship with sustainable construction.

Understanding the organizational culture in construction industry provides an opportunity to apply effective management practices that will improve performance and thus increase the level of both business level and national competitiveness. For the same reason, it is necessary to deepen the knowledge regarding the culture profile. Hereinafter, culture differences related to firm's core business, size, ownership and regional orientation shall be also presented and discussed.

Construction industry consists of several different stakeholders, working together on mutual projects with common goals. There are some evidence-based studies [32–34] about particular participants of the construction industry that have different objectives and different organizational cultures, which causes the conflicts among them while trying to accomplish the mutual project goals, thus being one of the principal causes of poor performance in construction projects. These findings reveal a motive for studying organizational culture differences regarding the specific core business of construction companies [22].

The study [22] revealed differences among Croatian construction companies too. The absolutely dominant culture type of consultants and supervisors, as expected, is hierarchy. Tested consultants and supervisors mostly come from the faculties of civil engineering and other

companies under public ownership, and later results showed that the hierarchy is a typical culture profile of public companies. Furthermore, civil engineering contractors show the mixture of the market and the hierarchy culture profiles, while building construction contractors and designers function as predominantly clan type organizational cultures. Therefore, although the Croatian construction industry's sample proved to be primarily hierarchy type, as stated earlier, testing different subcategories of subjects additionally confirmed that none of the culture types has an absolute dominance over the overall industry.

Such conclusions are in accordance with the study of the UK construction industry [32], which interpreted hierarchy culture as appropriate for civil engineering contractors, who are usually formal organizations in which control and coordination are achieved by using formal methods and procedures. On the other hand, the study marked designers as informal organizations in which control and coordination are achieved through empathy between organizational members and through direct personal contact, typical for the clan culture. Other studies revealed similar results as well. For example, market culture presence in contracting rather than in designing companies was indicated as compliant with the dynamic nature and competitive environment of site management [33, 35].

Another distinction [22], worth of exploring, was organization's size. The size of the companies was measured by the number of employees, as illustrated in **Table 2**. It was detected that small companies with up to 49 employees, and especially the micro-companies with up to 9 employees, feel that they function within the clan type of the organizational culture. But, it seems that once a company reaches a certain size, hierarchy makes everyday business both more efficient and comfortable. Therefore, organizational culture type recorded as the current in medium sized and large organizations is hierarchy. Hierarchy tendency growing in line with the company size has been reported by other scholars too [17].

Differences regarding organizational culture depending on the ownership of analyzed organizations were investigated in terms of public and private ownership as well as in terms of domestic and foreign ownership [22].

Current differences concerning the identified mixture of the clan and market type organizational culture in private companies and absolutely dominant hierarchy type organizational culture in public companies, could be overcome if managers in both subcategories would acknowledge their influence on communication and performance and try to manage long-term organizational change toward the desirable culture type, which will be presented later in the chapter.

As for the differences regarding predominantly domestic or foreign ownership of organizations in the Croatian construction industry, hierarchy appears to be the dominant culture type in both subcategories.

Finally, analysis based on geographical differences [22] was conducted as well. The very south and the very north of the Adriatic coast (Dubrovnik region as well as Istria, Kvarner and Primorje) show the current domination of the clan culture type, while construction companies in other parts of Croatia currently function within the hierarchy culture. Hopefully, physical distance of these regions reduces the risk of conflicts among belonging companies.

4. Expected culture in Croatian construction industry as a direction of potential organizational change

Up to now, presented arguments qualify organizational culture as an important issue that should be carefully managed in order to increase the probability of achieving better results and competitive advantage at all levels. Additionally, it should be appreciated that organizational culture is a phenomenon built and adjusted over a longer period of time. 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, 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 [19]. If trend is acknowledged as the development tendency of a phenomenon [36], one could conclude that it is important to consider trends while analyzing organizational culture. This means that appreciating the culture identified as preferred for the future is an important aspect of managing the organizational change and adapting to the environment.

During the course of the study presented in this chapter, future organizational culture of the Croatian construction industry was tested both from the aspect of existing engineers and the aspect of civil engineering students.

Parts of the research [21, 22] testing the preferences of the existing engineers identified a discrepancy between the current and preferred type of organizational culture in Croatian construction companies. These results are presented in **Table 3**.

Obviously, predominant preferred culture type is clan, which could lead to construction companies becoming a friendly place to work in, actively encouraging loyalty and collaboration in the workplace. In organizations like that, managers act as mentors and success is a result of a high commitment. Additionally, Welch's t-test showed that, at the significance level 0.05, clan is the dominant preferred culture type of the whole population. Therefore, propensity toward team work and family-type organizations turns to be a prevalent way of thinking in the overall construction industry in Croatia.

The mutual relation of current and preferred organizational culture in the Croatian construction industry can be presented as in **Figure 2**, with dotted line showing the preferred culture and the full line showing the actual, current organizational culture.

Preferred organizational culture was determined also for the relevant subcategories of the construction industry [22]. As expected, after identifying clan as being an absolutely dominant culture type wanted in future, almost all the tested subcategories expressed their preferences toward it. Only a couple of subjects would prefer hierarchy as the culture type wanted in the future:

- supervisors,
- large and extra-large companies with more than 250 employees,
- foreign construction companies in Croatia

Culture type	Mean score
Clan	33.97
Adhocracy	23.64
Market	16.21
Hierarchy	26.18

Table 3. Preferred organizational culture in Croatian construction companies [21].

As all the others prefer friendlier and more participative work environments characterized by the clan organizational culture and since the share of the discrepancies detected above is rather small, they are not considered very risky regarding potential disputes in construction projects.

Furthermore, this study was also complemented by the analysis [23] exploring which organizational culture type is preferred by civil engineering students in terms of their desirable employer in the future. This analysis started with the assumption that organizational culture of a company is primarily formed by employees working at a certain management level, having the power to influence the values and basic assumptions that are respected by others. Furthermore, civil engineering students are the population that will most likely attain management positions in construction companies over time, which makes their expectations and preferences relevant to development tendencies.

The analysis [23] was conducted among full-time students in their final year of study at the Civil Engineering Faculty Osijek, Croatia. The study was based on previously describedOCAI

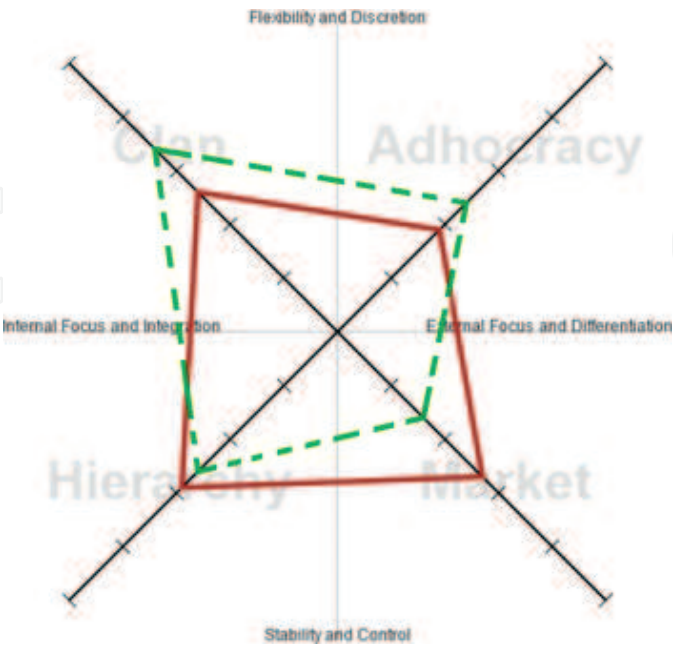


Figure 2. Relationship of current and preferred organizational culture in Croatian construction industry [21].

questionnaire, but measuring only the preferred culture. Sixty-three students completed the questionnaire, which comprises 86.3% of the selected population. The nature of the sample is described in detail in **Table 4**.

By analyzing the whole sample, it was found [23] that most of the students, namely 38.9% of respondents, preferred the clan as the type of organizational culture they would like to experience after graduation. Evidently, students' preferences coincide with previously presented preferences of the employed in construction industry in Croatia. Engineers and future engineers seem to aspire to work in a company whose success is primarily the result of employee loyalty, tradition as well as mutual cooperation and respect of all employees. Overall students' preferences are presented in **Table 5**.

As seen from **Table 5**, the dominant clan culture, adhocracy and hierarchy were identified as approximately equally desired organizational cultures, while the least preferred culture type was market. As adhocracy encourages risk-taking and experimentation with new knowledge and technologies, which makes such companies dynamic, innovative, creative and highly entrepreneurial [30] and thus more successful than the others [29], it is promising that adhocracy type won such a high score. On the other hand, high preference of the hierarchy culture suggests that, even by the young, modern organizational development imposed by the nature of work in construction industry is not fully recognized. Hierarchy organizational culture is just as good as any other culture type, but it is more appropriate for activities where rigid forms and procedures are necessary. On the contrary, modern construction industry is characterized by organic organizational structures, such as project and matrix structures, increasingly replacing traditional hierarchical structures [23]. As for the market organizational culture, its

Responding students' characteristics	Frequency	Ratio (%)
<i>Gender</i>		
Male	35	55.56
Female	28	44.44
<i>Faculty department</i>		
Hydro-technics	17	26.98
Bearing structures	29	46.03
Organization, technology and management in construction	17	26.98
<i>Desired future employment</i>		
Contractor	25	39.68
Designer	26	41.27
Other	12	19.05
<i>Desired place of work</i>		
Croatia	31	49.21
Abroad	32	50.79

Table 4. Descriptive statistics of the selected students sample [23].

Culture type	Mean score
Clan	38.90
Adhocracy	24.61
Market	13.23
Hierarchy	23.25

Table 5. Relative preferences of the future employer’s organizational culture [23].

lowest score could have been expected, not just because it was the case of working population’s preferences, but the literature proves that the market type is rarely a dominant organizational culture in construction industry, occasionally preferred only by contractors [34].

Finally, it is fascinating that the results of this study [23] show a distinct homogeneity of the tested sample. Clan is a dominantly preferred culture type regardless of gender: in terms of gender, adhocracy and hierarchy won pretty much the same scores, only market culture was somewhat rather chosen by male students than by female students. Furthermore, the differences among students depending on the faculty department at which they study, desired place of work and desired future employment practically do not exist. It should be highlighted that homogeneity in terms of desired employment is contrary to previous findings about differences between contractors and designers, often resulting in conflicts due to different ways of thinking [22, 32–34]. Such congruity among future contractors and designers might actually be interpreted as a future competitive advantage of Croatian construction industry, because it should contribute to the success of communication between main stakeholders involved in the same building project.

There are only four civil engineering faculties in Croatia. The results presented earlier focused on students’ expectations at only one of those faculties. Therefore, the results illustrate only the sample preferences and not the preferences of the whole student population at relevant faculties in Croatia. However, given that Croatia is a small country and considering that the results provide information about the attitudes of nearly a quarter of the population, they can be considered a fair indication of overall trends of organizational culture in Croatian construction industry.

5. National culture’s influence on competitiveness

World Economic Forum defines competitiveness as the set of institutions, policies and factors that determine the level of productivity of an economy, which in turn sets the level of prosperity that the country can achieve [9]. Official opinion of the National Competitiveness Council in Croatia is built on that basis, describing competitiveness as a group of elements, development policies and institutions which, by their correlation, influence the general level of productivity and the quality of the business sector and business environment [37].

Countries around the world are at different stages of their development and thus at a different level of their competitiveness. Building on previous findings [38–40] that some culture variables affect economic and business performance at the country level, a more detailed cross-country investigation of national culture's role in explaining competitiveness was conducted as part of the research presented in this chapter [24].

As for the national culture dimensions, this study [24] relied on Hofstede's culture dimensions. Hofstede and his team defined six different dimensions and based on their comprehensive studies, they attributed specific scores to each dimension, so they would describe the nature of cultural characteristics within a country [25]:

1. Power distance illustrates the degree to which inequalities in the society are expected and accepted by all, and especially the less powerful members of that society. High power distance index (PDI), with score over 50, means it is a society with a strict hierarchical order, respected without a need for justification. On the other side, power distance index with a score under 50 suggests that people in that country strive to even the distribution of power.
2. Individualism versus collectivism (IDV) labels the relationship between the individuals in a country. If the score attributed to this dimension is over 50, individualism is a dominant culture characteristic of a society, meaning that its members are expected to take care only of themselves and their immediate family. Additionally, typical of individualism are individual's actions and decision making. Opposed to that, scores under 50 stand for collectivist societies, with tightly knit social framework, in which members of a particular group look after each other in exchange for unquestioning loyalty. Individuals usually do not undertake decisions and actions on their own.
3. Dimension also differentiating countries regarding culture is masculinity or for some femininity (MAS). If the index score is above 50, it is a case of a masculine society characterized by achievement, heroism, assertiveness and preference of material rewards for success. Contrary to masculine societies, there are also feminine societies, whose MAS index is under 50. Members of such societies prefer cooperation, modesty and caring for the weak. Quality of life is highly valued in feminine countries.
4. Uncertainty avoidance index (UAI) expresses the degree to which the members of a society feel uncomfortable with uncertainty, especially the fact that the future is unknown and insecure. Index scores higher than 50 expose high uncertainty avoidance, which involves avoiding risks and any changes. Members of such countries are mostly intolerant of unconventional behavior and innovative ideas. If the index score is under 50, the country expresses low uncertainty avoidance, causing a more relaxed attitude in which practice counts more than principles and risks are accepted as a norm.
5. Long-term orientation (LTO) versus short-term orientation describes society's attitude toward past, present and future. Long-term orientation countries are detected after index scores above 50. Those countries encourage thrift and efforts in modern education as a way to prepare for the future. On the other hand, index scores lower than 50 reflect short-term orientation societies, whose priority is to honor tradition and norms. Those countries are not prone to societal change.

6. Indulgence versus restraint (IVR) assesses whether people freely accept fulfillment of natural human desires. Countries whose index score is above 50 are indulgent societies which encourage their members to enjoy life and have fun. On contrary, countries whose index is under 50 are restraining societies that suppress enjoyment by imposing strict norms of social behavior.

All GCI and culture dimensions considered in the cross-country investigation are presented in **Table 6**.

Economy	GCI	Culture dimension scores					
		PDI	IDV	MAS	UAI	LTO	IVR
Switzerland	5.8	34	68	70	58	74	66
Singapore	5.7	74	20	48	8	72	46
United States	5.6	40	91	62	46	26	68
Finland	5.5	33	63	26	59	38	57
Germany	5.5	35	67	66	65	83	40
Hong Kong SAR	5.5	68	25	57	29	61	17
Japan	5.5	54	46	95	92	88	42
Netherlands	5.5	38	80	14	53	67	68
Norway	5.4	31	69	8	50	35	55
Sweden	5.4	31	71	5	29	53	78
United Kingdom	5.4	40	91	62	46	26	68
Canada	5.3	39	80	52	48	36	68
Denmark	5.3	18	74	16	23	35	70
New Zealand	5.3	22	79	58	49	33	75
Qatar	5.3	80	38	53	68	23	34
Belgium	5.2	65	75	54	94	82	57
Luxembourg	5.2	40	60	50	70	64	56
Malaysia	5.2	100	26	50	36	41	57
United Arab Emirates	5.2	80	38	53	68	23	34
Australia	5.1	38	90	61	51	21	71
Austria	5.1	11	55	79	70	60	63
France	5.1	68	71	43	86	63	48
Ireland	5.1	28	70	68	35	24	65
Korea, Rep.	5.0	60	18	39	85	100	29
China	4.9	80	20	66	30	87	24
Czech Rep.	4.7	57	58	57	74	70	29

Economy	GCI	Culture dimension scores					
		PDI	IDV	MAS	UAI	LTO	IVR
Estonia	4.7	40	60	30	60	82	16
Chile	4.6	63	23	28	86	31	68
Spain	4.6	57	51	42	86	48	44
Thailand	4.6	64	20	34	64	32	45
Indonesia	4.5	78	14	46	48	62	38
Italy	4.5	50	76	70	75	61	30
Latvia	4.5	44	70	9	63	69	13
Lithuania	4.5	42	60	19	65	82	16
Poland	4.5	68	60	64	93	38	29
Portugal	4.5	63	27	31	99	28	33
Malta	4.4	56	59	47	96	47	66
Philippines	4.4	94	32	64	44	27	42
Russian Federation	4.4	93	39	36	95	81	20
South Africa	4.4	49	65	63	49	34	63
Turkey	4.4	66	37	45	85	46	49
Bulgaria	4.3	70	30	40	85	69	16
Colombia	4.3	67	13	64	80	13	83
India	4.3	77	48	56	40	51	26
Mexico	4.3	81	30	69	82	24	97
Romania	4.3	90	30	42	90	52	20
Slovenia	4.3	71	27	19	88	49	48
Vietnam	4.3	70	20	40	30	57	35
Hungary	4.2	46	80	88	82	58	31
Morocco	4.2	70	46	53	68	14	25
Peru	4.2	64	16	42	87	25	46
Slovak Republic	4.2	100	52	100	51	77	28
Brazil	4.1	69	38	49	76	44	59
Croatia	4.1	73	33	40	80	58	33
Iran, Islamic Rep.	4.1	58	41	43	59	14	40
Uruguay	4.1	61	36	38	98	26	53
Greece	4.0	60	35	57	100	45	50
El Salvador	3.9	66	19	40	94	20	89
Serbia	3.9	86	25	43	92	52	28

Economy	GCI	Culture dimension scores					
		PDI	IDV	MAS	UAI	LTO	IVR
Trinidad and Tobago	3.9	47	16	58	55	13	80
Argentina	3.8	49	46	56	86	20	62
Bangladesh	3.8	80	20	55	60	47	20
Pakistan	3.4	55	14	50	70	50	0
Venezuela	3.3	81	12	73	76	16	100

Table 6. Global competitiveness index and national culture dimensions' scores of selected countries [24].

It is evident from **Table 6** that selected countries differ both in terms of competitiveness and cultural characteristics. Different statistical methods were used to perceive their relationship.

Bivariate correlations showed that competitiveness has a negative correlation with power distance index, masculinity and uncertainty avoidance index, respectively. This could imply lower competitiveness as in case of Croatia. Other culture dimensions showed a positive correlation with competitiveness. However, due to multidimensional nature of national culture, the overall effect of national culture to competitiveness was assessed by using ordinary least squares regression analysis including all six culture variables simultaneously. Additionally, beside GCI and culture dimensions' scores, GDP per capita was included into the regression model in order to control economic development. It turned out that the created model had a high predicting value, since it explained 74% of variability ($R^2 = 0.738$) [24].

In such a model, only two culture dimensions remained statistically significant predictors of competitiveness: uncertainty avoidance with a negative sign and long-term versus short-term orientation with a positive association [24]. Clearly, in modern times, characterized by the globally accelerating pace of change, individuals must accept risk as the norm. Otherwise, as in the case of Croatia, high UAI score undermines the national competitiveness level. Yet, the increase of long-term orientation index improves national competitiveness.

Such findings can be used by policy makers in order to improve national competitiveness, but are interesting also in terms of business level discussion, since connection of macroeconomic competitiveness with company level competitiveness seems to be straightforward and factors enhancing national competitiveness are very likely to encourage companies' competitiveness. A great authority on competitiveness Michael Porter said long ago that it was the firms, not nations, which competed in international markets [41], and his opinion is still appreciated [39]. Such opinion suggests that national competitiveness can be considered as the aggregation of competitiveness of all businesses operating in a country, meaning that a country is competitive when its companies are competitive. Therefore, it is possible to extrapolate the above presented findings to the business level.

6. Conclusions

Owing to its status of a transitional country, and especially after becoming a full member of the EU, importance of competitiveness of the overall economy has definitely been the most

important strategic question in Croatia. Especially the competitiveness of the most important economy segments, like construction industry, is being emphasized.

At the same time, competitiveness is determined by various factors. The studies presented in this chapter assume that many of these are people driven, thus justifying exploring the relation of competitiveness with organizational culture and the need for learning about organizational culture in more detail.

Not just that construction industry is an important economy segment, but characteristics of organizational culture in construction industry significantly differ from culture features of other industries [12]:

- there is no common trend between occupational levels;
- there is a lack of communication between different occupational levels;
- increased use of subcontractors makes the situation more difficult because the higher levels are likely to be the employees of the main contractor, whereas the lower levels are likely to be the employees of subcontractors;
- distant locations have led to a situation that construction companies usually have at least two cultural identities: the corporate or "head office"-based culture and a distinctive, separate project culture associated with each unique construction project;
- there are some cultural differences among the main stakeholders involved in a project, especially between designers and contractors.

Knowing that, and appreciating the fact of substantial differences in national cultures, the necessity for research of construction industry's organizational culture peculiarities in specific national context is imposed. This chapter presents results of a comprehensive case study regarding organizational culture of Croatian construction industry and its influence on competitiveness.

It has been stated that the currently dominant organizational culture of the tested sample is hierarchy, although other culture types are also present in some subcategories of construction industry. Different behavior resulting from different culture profiles could by all means develop miscommunication conflicts while working together in projects, so organizational culture needs to be managed carefully.

Beside knowledge about the current culture profile, management of organizational culture as a part of efficient organizational change management, surely needs the insight into the preferred organizational culture too. Presented results showed that the clan is predominantly preferred culture type in almost all construction companies, as well as among the engineers-to-be.

The greatest value of this chapter for practitioners is the idea that gradual implementation of the clan culture in construction companies in Croatia would:

- meet employees' expectations, thus making them more satisfied and successful workers,
- improve the communication among different stakeholders working together,
- have a positive effect on organizational learning, innovativeness and competitiveness, since the study [26] reporting on such effects of adhocracy culture, identified that clan culture type might have the same effect

All of these have a potential of easing the achievement of strategic goals in the long run and increasing both the company and industry level competitiveness. Since it was proven that human commitment mediates relationship between organizational culture and organizational performance [42], these specific findings should be seen as a motive for conscious action of managers, toward culture change which would lead to performance improvement.

As for the scholars, presented findings generate value through building on the body of knowledge regarding culture and competitiveness issues in specific national contexts. Although applied statistical methods confirmed the reliability of results, the main limitation of the case study presented in this chapter is definitely the size of tested samples. Therefore, further research should analyze additional subjects too. It might be interesting also to measure company level competitiveness directly and relate it to determined organizational culture.

Starting from the initially defined purpose, over the discussion of results to the conclusion, this chapter tries to provide an outline of the current and preferred culture profile characteristics of the Croatian construction industry together with their competitiveness implications.

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