



Evaluation of organisational culture dimensions and their change due to the pandemic

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ABSTRACT

The purpose of this research is to determine whether the Covid-19 pandemic has had an impact on the change of organisational culture in public high schools. Additionally, if there has been a change in organisational culture, to what extent does this change differ from the preferred type? Cameron and Quinn's OCAI questionnaire was used to determine the types of organisational culture. 453 valid responses were obtained from teachers of randomly selected public secondary schools in all regions of the Czech Republic. Pre-Covid-19, the present and preferred status were assessed. It was found that initially hierarchy culture was predominant, while currently preferences for adhocracy and market culture have increased significantly, although the hierarchy type still prevails. In the type of future, respondents will see the clan of organisational culture. The shift in each type, but also in each of its dimensions in the three periods studied, provides the researcher with a theme for deeper research into the context, and for school institutions and principals to develop strategies to support the creation of a healthy organisational culture.

1. Introduction

There is no consensus among the authors on the definition of organisational culture. Despite this, the authors recognize that organisational culture is an important subsystem of an organization, a determinant of organisational effectiveness and the quality of work life of organisational members (e.g., Deal & Kennedy, 1982, Schein, 1992, Cameron & Quinn, 1999, Schein & Schein, 2016, Miranda-Wolff, 2022). Organisational culture is defined as a phenomenon consisting of individual elements (Schein, 1992). According to Schein's model, the most commonly cited elements of organisational culture are artifacts, norms, attitudes, values, and basic assumptions (Schein, 1992). In other words, the basic values, attitudes, and beliefs that exist in an organization, the patterns of behavior that result from these shared meanings, and the symbols that express the connection between the beliefs, values, and behaviors of organisational members (Denison, 1990). Organisational culture is the result of a learning process. It is the result of the accumulation of experiences passed on to individuals through the socialization process; it provides continuity, reduces employee uncertainty, and

affects their job satisfaction and emotional well-being; it is a source of motivation and can be a competitive advantage (Lukášová, 2010).

Organisational culture can be viewed from different perspectives and relationships (e.g. Handy, 1993, Deal & Kennedy, 1982, Trompenaars, 1993, Hall, 1995, Goffee & Jones, 1998 and others). For the research presented here, a typology of organisational culture was chosen following the Cameron and Quinn (1999) model.

Organisational culture is created in all types of organisations, regardless of their purpose, not just profit making. Thus, organisational culture is also an important phenomenon in schools.

The importance of school culture and image will increase significantly as parents gradually become aware of and eventually increasingly realize the possibility of choosing the most suitable school for their children. Also, the current tendency to partially link the financial resources allocated from the state budget to schools to the number of pupils will strongly support the need for every school to address this issue. Of course, the newly emerging non-state schools (private and church schools) will also play a significant role in terms of expanding supply and thus increased competition (Nezvalová, 2006).

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The pandemic situation caused by Covid-19 had (and still has) an impact on everyone's personal and professional life. With the anti-epidemic measures, there is also a change in organisational culture. Contacts between people are reduced, meetings move to online environments, the balance between personal and professional life is disrupted, stress load increases, motivation is lost, etc. (Farkašová, 2021). Management must be able to respond to changes and adopt new solutions so that, among other things, the organisational culture is not weakened.

Here, a research gap was identified: Did the pandemic have an impact on the potential change in the organisational culture of schools?

A research question was formulated: Was there a change in organisational culture in public secondary schools during the Covid-19 period?

The school system was chosen because it was necessary to switch en masse to a different form of teaching, teachers were forced to quickly master new teaching methods, and all their activities were conducted online. These major changes are very likely to have affected the organisational culture.

The processing procedure is as follows. First, the issue of organisational culture and models for identifying its types is elaborated. Next, attention is paid to key aspects of organisational culture in public secondary schools. The following section describes the methodology and the tools and methods used in the solution. The results obtained from the questionnaire survey in public schools are then presented and discussed. Finally, the key findings of the research are summarized and the limitations and benefits of the research are discussed.

2. Theoretical background

Organisational culture (OC) is the image of leadership and is seen as an important goal of leaders. Interpersonal relationships, environment, human realization and human personality development, employee performance and satisfaction, image and brand of the organization are all organisational culture. It is associated with the behaviour and attitude of the management, the performance of the organisation, the behaviour of the organisation, and the employees. The specific definition of the content of the term varies, but the framework of organisational culture is understood similarly (see, e.g., Denison, 1990, Hall, 1995, Gordon, 1991, Drennan, 1992, Schein, 1992, Brown, 1995, Sackmann, 2006).

For the purpose of the present research, the concept of organisational culture was understood as: a set of basic assumptions, values, attitudes, norms of behavior that are shared within the organization and that are manifested in the thinking, feeling, and behavior of organisational members and in artifacts of material and immaterial nature.

The attempt to clarify the structural relationships of individual elements of organisational culture has led some authors to formulate models of organisational culture. Schein's model (1992) is the most cited and used model. With his conception of organisational culture as a phenomenon structured into three levels (artifacts, values and norms, and core beliefs), Schein influenced a whole generation of researchers (Lukášová, 2010). Many authors identify with this concept (e.g., Schneider & Barsoux, 1997). Some elaborate it further, such as Lundberg (1996), who distinguished four levels of culture (artifacts, rules and norms of behavior, values, beliefs). Other authors structure the content of organisational culture differently. These include, for example, Kotter and Heskett (1992), who distinguish only two levels of organisational culture (patterns of behavior and shared values). Two levels are also distinguished by Hofstede (2001). In his "onion diagram", he shows cultures at different levels of depth: the invisible core is the values that can be derived from people's behaviour; he identifies visible rituals, heroes, and symbols as practices. In contrast, Hall (1995) distinguished three levels of organisational culture: Artifacts and etiquette, Behaviors and actions, Core morals, beliefs, values. Also structured organisational culture in a similar way.

The strength of an organisational structure is influenced by a number of factors. Authors pay different attention to each influence and classify them in different ways (see, e.g. Handy, 1993, Gordon, 1991, Drennan, 1992, Brown, 1995). The most frequently emphasized are environmental influences (national culture, socio-cultural factors, business environment, competitive environment, customer influence), the influence of the founder or leader or owners, the influence of the size and age of the organization, the influence of technology, organisational structure, management methods and systems, and leadership style.

Over the years, theories have also been tested to specify features of organisational culture that have been shown to be related to organisational performance. This refers to the type of strong culture that is characterized by stability and a high degree of sharing and respect for certain beliefs and values within the organization. However, it has the disadvantage of resistance to change, and fixation on past experience (e.g., Kotter & Heskett, 1992, Brown, 1995). An engaged and participative culture contributes to performance through the initiative and commitment of a loyal workforce (e.g., Wiley & Brooks, 2000). Although employee engagement is an important determinant of high performance, according to Kotter and Heskett (1992), organisations whose culture helps them to adapt to change can be successful in the long term. Organisational learning capability, customer focus, and readiness to change have been identified as essential features of an adaptive culture (Farell, 2000).

Probably the first typology of organisational culture, authored by Harrison (1972) and Handy (1993), distinguishes the power culture in which individuals or the individual at the centre of the organization are dominant. The role culture is based on rules, procedures, norms, plans, logic, and rationality. Task culture is task-oriented. The person culture is a culture in which the individual, on whom the organisation depends for its existence, is at the centre of everything that happens.

The basis of typology is based on two dimensions: task orientation versus relationship orientation, and hierarchy versus equality. Combining these two dimensions results in four types of culture with metaphorical names: family, Eiffel tower, guided missile culture, and incubator culture.

According to Deal and Kennedy (1982), the culture of organisations is most strongly influenced by the wider social and business environment. The authors conclude that from this perspective, it is possible to identify the macho culture, the hard work culture, the bet-your-company culture and the process culture. While Deal and Kennedy formulated their theory in terms of the relationship between organisational culture and environmental influences, Ansoff et al. (2018) distinguished OC types according to how the organisation responds to environmental demands. OC can then be the stable, reactive, anticipating, prospecting, and creative culture.

Bridges' (1992) typology includes as many as 16 organisational types. To identify them, Bridges developed the Organisational Character Index (OCI) questionnaire, which is based on four pairs of opposing tendencies: extraversion or introversion, sensing or intuiting, thinking or feeling, judging or perceiving.

The Goffee and Jones (1998) typology affects the content of an organisation's culture in terms of the relationships that exist within the organisation, taking into account the nature of these relationships and their implications for organisational performance. Two dimensions form the basis of their 'double S cube': sociability and solidarity.

For the purpose of the research, the model of Cameron and Quinn (1999) was chosen, which is based on the Competing Values Model (Quinn & Rohrbaugh, 1983). This model was chosen because it captures, as can be seen from the description of each type, the prevailing organisational values, the associated strategic priorities in each type of culture, captures the atmosphere in the organisation, the leadership style, and the success criteria of the organisation. This fact is probably related to the fact that the model was formulated in relation to the search for the conditions of organisational effectiveness (see Competing Values Model) and that the degree of representation of these types in the culture of the

organization allows an implicit assessment of the strategic orientation of the organization.

The basic dimensions of the model are flexibility versus control and internal versus external focus. The types of culture defined by the authors using these dimensions are referred to as the clan culture, the hierarchy culture, the adhocracy culture, and the market culture (Fig. 1).

Each type is characterised by the goals the organisation is working towards and the tools it uses to achieve them.

Clan culture is characterised by a friendly working environment, shared values and goals, and team thinking. It has more the character of an extended family than of a business entity. The commitment to the organisation is high. The benefits of each individual's development are emphasised, customers are seen as partners. Teamwork, participation, and consensus are seen as paramount in the organisation.

At the adhocracy culture a workplace has a dynamic entrepreneurial and creative environment. People are willing to take risks, managers are visionaries and innovators. Innovative approaches and experimentation bring the organization together. The emphasis is on being a leader in its field and developing new products. Innovation and the ability to adapt to a turbulent environment is seen as a source of profitability, and the success of the organisation is judged in this sense. The main task of managers is to encourage individual initiative and creativity.

The market culture is characteristic of a results-oriented organization in which people are competitive and focused on their goals. The organization is unified by a win-orientation, with success defined by gaining market share. Long-term attention is paid to competition, fierce competitiveness prevails.

The hierarchy culture represents a formalized and structured work

environment, focusing on procedures and regulations, with formal rules as the unifying element. The smooth running of the organisation is considered paramount; the goal is stability and efficiency. Success is defined as reliability of delivery, meeting deadlines, and low costs. Employee management is primarily focused on ensuring employee security.

2.1. School culture

The school is an institution that has the extraordinary potential to be a community because the goals and the task for which it was founded and exists are universally beneficial: in the school, people are to be educated and cultivated into human beings. Education is a recognized personal and social value (Nezvalová, 2006).

The concept of organisational culture is probably one of the best examples of ideas that can be transferred from the area of general management theory to the domain of educational management to help solve this problem. Looking at schools from the perspective of organisational culture helps to describe them, understand them better as organizations, and eventually makes school transformation easier (Dorczak, 2013).

The organisational culture of the school determines and influences the standard of collegial relationships between teachers, the standard of relationships between teachers and pupils, includes the code of conduct for teachers and pupils, and the principles of general communication between the school and parents and the extracurricular environment. Therefore, it significantly influences the general climate of the school, creates criteria for the level of peer interactions, can serve as a

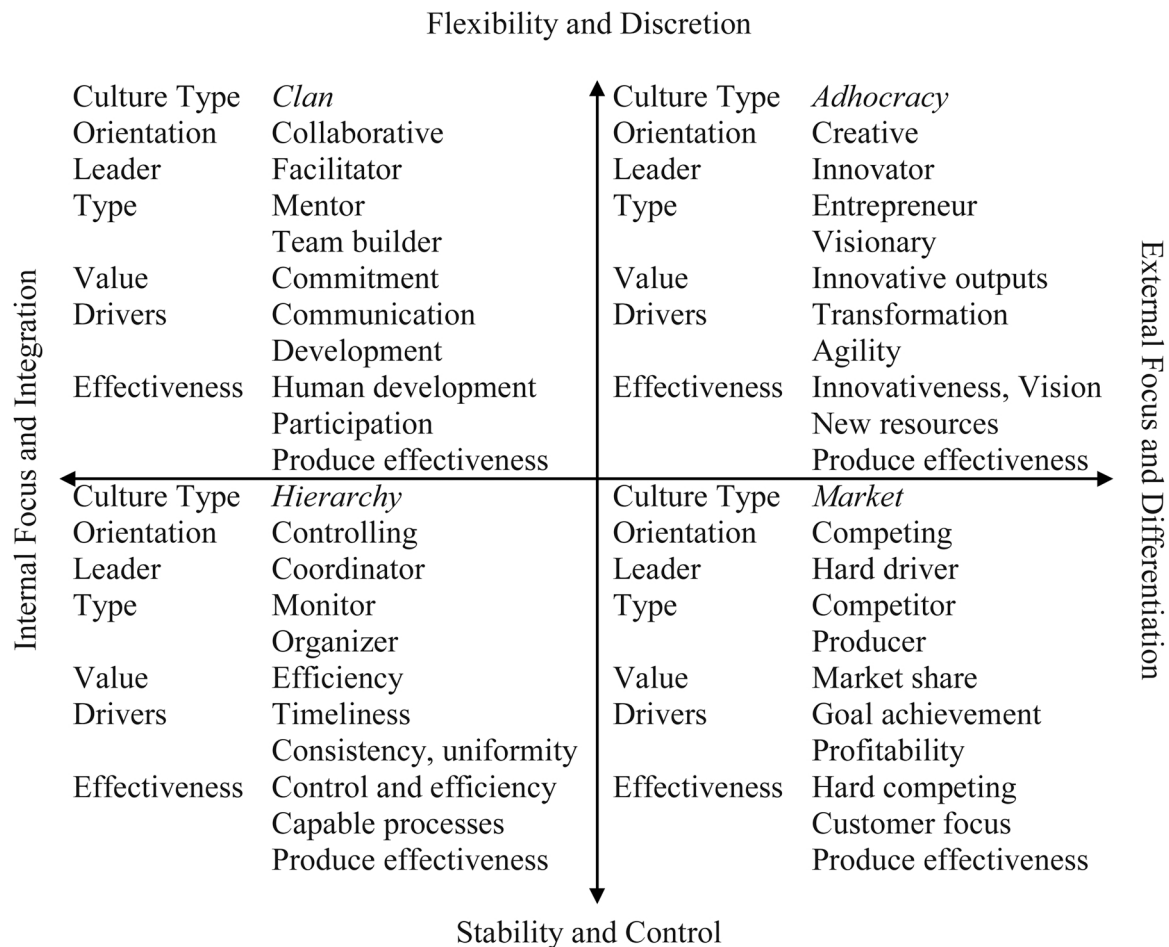


Fig. 1. The Competing Values of Leadership, Effectiveness, and Organisational Theory, Source: Cameron & Quinn, 2006.

differentiating criterion for (not) hiring new staff, and contributes to the formation of awareness of the school (Rymeš, 2010).

In the 1980 s, the school improvement movement appeared. Its protagonists emphasised, among other things, the importance of school culture and the value system of the school as enablers of change (e.g., Fullan, 1998). At the same time, interest in management and organisational theories was increasing. In particular, organisational culture, organisational leadership, and the relationship between the two became a fundamental starting point for work on school culture. In particular, these works focused on organisational culture, effective management (McCaffer, 2018), leadership emphasizing the pedagogical aspect of school work (educational leadership) (Amy, 2022), and explaining the relationship between school culture and change (Sarason, 1996).

School culture is a very important part of the school image. It consists of various aspects, for example. pedagogical and didactic activities, organisational activities, school presentation, or school routing (Petlak, 2019). Since the 1990 s, researchers' interest has shifted from examining the culture of the school as a whole to examining the individual subcultures of the school (teachers, students, teaching, decision-making, etc.), or the sub-elements and processes that are perceived as relevant to the culture of the school, in which the culture manifests itself and which it influences (Pol et al., 2005). Many consider these themes to be important dimensions of school culture (Prosser, 2013).

The literary analysis conducted suggests that the study of the problems of the school as an organization should be carried out under the paradigm of organisational culture. This approach will provide understanding of the context of social interaction of participants in the educational process, coordination of their joint work for the successful implementation of all goals set for the school (Nesmeianova & Lipatov, 2020).

Kuznetsova (2017) identified the key problematics of research on organisational culture in schools. They are as follows: paradigm, methodology, typologies, and impact on school effectiveness. She found that empirical studies focus mainly on the impacts of organisational culture on school effectiveness, as well as on the development and transformation of culture.

Popescu and Olteanu (2015) argue that a strong organisational culture has a positive influence on the performance(s) of the educational unit because it allows motivating the teaching staff. Whereby projects, values, the platform of objectives, the professional ethics code, the management rules, the organisational history are pillars of a strong culture.

On the other hand, the result of the research by Suharningsih and Murtedjo (2017) indicates that there is no significant effect between organisational culture and teacher performance. The value of the coefficient is positive, which means that the better the organisational culture, the better teacher performance, and vice versa, the less good organisational culture will lead to a decrease in teacher performance. But the relationship is not significant.

Adapting the organisational culture to systemic changes has a positive effect on the organization's success. It is important to manage the elements of coming changes in the culture of the organization in order to avoid any misunderstandings and social disappointments, as emphasized by Hesse-Gaweda (2018).

Interest in the issue of school culture and its potential to understand leadership processes is growing (Torres, 2022). Leadership creates a positive effect on the members of the organization and contributes to the formation of a strong school culture (Kalkan et al., 2020). These authors found that school culture has a mediator effect on both leadership styles and organisational image. This is due to the realization of the leadership styles that have an important role in developing an organisational image, through school culture (Kalkan et al., 2020). Leadership styles influence teachers' organisational culture perceptions as significant predictors (Ciftgul & Cetinkanat, 2021). Kang et al. (2021) emphasize the importance of responsive leadership for fostering empowerment, but also show that other organisational factors, such as organisational type,

structure, size, and prior performance, explain significant variation in empowerment. Also, Pavlidou and Efstathiades (2021) argue that empowering the head of departments will enhance the school's organisational culture. In this context, it is worth drawing attention to the research results of Terzi (2016). He found that secondary school teachers believe that a success oriented and supportive atmosphere exists at workplace and trust their coworkers more than they do the principal. The support and duty dimensions of organisational culture are significant predictors of organisational trust.

Comprehension-oriented capturing, describing, and taking school culture into account seems essential for sustainable school development. School evaluations can increase their legitimacy and effectiveness by deliberately including the specific school culture (Bucher & Manz, 2022).

2.2. Covid-19

The Covid-19 pandemic has had profound consequences on the social, economic, and cultural life at the global level. The educational dimension has also been affected in the regular functioning of the schools, with the temporary closure of educational institutions, as well as the impediment of face-to-face classes (Sa & Serpa, 2020).

The question arises: How resilient is the organisational culture in this era that we have not experienced before? Which elements of organisational culture will be transformed and which will be sustained? How will relationships between people who work from home change? What impact will changes in organisational culture have on their performance? (Spicer, 2020).

The distinctive element that has emerged is remote work. This element has affected education perhaps the most. The shift to a remote work environment introduced new barriers to inclusion that call for reimagining the contexts and cultures in which individuals are now working. The new remote working environment poses a challenge not only in terms of e-mail traffic, lack of training and infrastructure to support ICT-enabled working, and an absence of appropriate support (McDowall & Kinman, 2017), but also includes developing loyalty and improving employee job satisfaction and organisational commitment (Camp et al., 2022). Completely new ways of working and the psychological burden on education workers are significant.

The Covid-19 crisis should be an incentive to build a learning capability for organisational resilience (Orth & Schuldis, 2021).

Weiner et al. (2021) found that principals reported varied levels of psychological safety in their schools with associated differing levels of organisational learning and responsiveness to the crisis. However, rather than being grounded in environmental conditions (e.g., urbanicity, demographics, etc.), organisational factors and specifically, differences in accountability, principal autonomy, professional culture, and teacher decision-making were all key in the degree of psychological safety exhibited.

Smith et al. (2022) investigate the impact of the Covid-19 pandemic on teacher burnout, loneliness, and resilience. While self-reported burnout and resilience scores did not show a significant increase during the pandemic, the rates of burnout and loneliness remain higher than the public. Education has real challenges and opportunities to explore individual and organisational interventions to combat burnout and loneliness and improve resilience among teachers. Managers (principals) must come with ideas on how schools can shift their organisational cultures to better support teachers' emotional well-being (Stark et al., 2022). The Covid-19 pandemic has provided educational stakeholders with an opportunity to reflect on their visions for healthy schools and how best organize schools to support these visions (Justis et al., 2020).

This school's transition to online education was guided by a shared goal to not only move content online but also a rich participatory culture among staff. Critical forms of participation and community practices are presented that were crucial in supporting teachers through the transition (Justis et al., 2020).

Principals implemented changes and created new organisational routines in order to support their students, especially for students receiving special education services (Grooms & Childs, 2021). To ensure that students would attend school, district and school leaders were challenged to create school environments and cultures that would promote attendance and general safety. Supports, resources, and integration of technology helped influence student attendance and helped to create plans for safe reopening (Childs et al., 2022).

The effects of remote work are determined by the dominant organisational culture. Krajcsák and Kozák (2022) stated that in organizations with a dominant market culture, organisational behaviour has changed the least because of the home office, with only a decline in the dimension of civic virtue. In organizations with a dominant clan culture, conscientiousness decreased, while the other three dimensions increased. The dominant hierarchy culture reacted the most unfavourably, excluding the dimension of courtesy, as all dimensions decreased.

COVID-19 poses to higher education at a time when it needs to redefine its teaching methods, leadership models, and interaction channels, by going digital towards the improvement of the sustainable development of its teaching (Sa & Serpa, 2020).

3. Research procedure and methods

The research question was formulated: Was there a change in organisational culture in public secondary schools during the Covid-19 period?

Therefore, it is necessary to find the type of organisational culture in the time before the pandemic and now. The desired type of OC will also be identified. For the desirable type of organisational culture, respondents reflect on the question: If your organization is to flourish, to achieve dramatic success, and to accomplish its highest aspirations in, say, five years, what kind of culture will be required?

To identify the type of organisational culture, the researchers chose the Cameron and Quinn (1999) model.

To identify the type of organisational culture, the authors created the Organisational Culture Assessment Instrument (OCAI). The content of the organisational culture of the surveyed organizations is determined by six content components on which the questionnaire is based. They are as follows:

- dominant features of the organisation (characteristics of the environment and atmosphere prevailing in the organisation);
- the way of leadership in the organisation (what is understood as leadership in the company, what is considered as leadership skills);
- the way employees are managed (what characterises the management style, what methods are used);
- organisational cohesion (which ensures organisational cohesion);
- priority strategic factors (what is emphasised in the organisation, what is the focus of the organisation);
- success criteria (how success is defined in the organisation).

For each of the six dimensions, four statements are presented, each of which characterizes one of the four types of culture listed above. The respondent is asked to divide 100 points between statements describing his or her organization, in the pre-pandemic period, in the current period, and also his or her desired type. More points mean higher type influence. The questionnaire is simple in terms of administration. Its shortcoming is considered to be that it is imprecise (Sackmann, 2006). However, it is suitable for analyses focusing on strategic aspects of organization culture.

The respondents were public high school teachers. The principals of 40 randomly selected public secondary schools in all regions of the Czech Republic were asked to cooperate by phone or in person. Thirty of them promised to send the link to the online questionnaire to teachers in their school. 453 valid responses were received. The majority of the respondents were female (65%), and the age of the respondents 45–49

years (23%) was also prevalent. According to the 2021 statistics, male teachers make up 40.1% of all teachers in secondary schools. Respondents in that range accounted for 17% and the highest percentage of teachers (26.3%) are in the 55–59 age group (www.msmt.cz). The survey was conducted for three weeks in March 2022.

For the questionnaire data, the mean of each dimension was found in Excel. In addition, the standard deviation was calculated. Standard deviation (SD) is a measure of the amount of variation or dispersion of a set of values (Friedrich, 2017). A low standard deviation indicates that the values tend to be close to the mean, while a high standard deviation indicates that the values are spread over a wider range. The standard deviation may serve as a measure of uncertainty.

Cronbach's alpha is the most common measure of internal consistency ("reliability"). A reliability coefficient of .70 is considered 'acceptable' in most social science research situations. The alpha coefficient above .80 means that items have high consistency.

Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. Below, for conceptual purposes, the formula for the Cronbach's alpha is shown:

$$\alpha = \frac{Nc}{v + (N - 1)c} \quad (1)$$

Here N is equal to the number of items, c is the average inter-item covariance among the items and v equals the average variance.

The values (means) of the dimensions in each type of organisational culture in the pre-pandemic, current and preferred state are summarized in tables and graphs. Changes in their scores over the periods under review are also captured. Changes in the dimensions and types of organisational culture in general are commented on and discussed.

4. Results and discussion

The results of the Cronbach Alpha values were considered reliable. Items are acceptable or have high consistency (Table 1).

4.1. Dimensions of organisational culture

Standard deviation (SD) shows the range values in a set of values. The lower the SD value, the less the individual values differ from the mean, the less the responses of the respondents differ (Table 2).

In the pre-Covid-19 era, the dominant dimensions are Dominant characteristics and Management of employees with hierarchy and clan dominant cultures. Employees rate the pre-pandemic period as a period of a formalized and structured friendly environment at work with a mutual willingness to share knowledge and experience.

The pre-pandemic dimensions represent a combination of a work environment full of sharing and collaboration, governed by formal rules and trying to be competitive.

Currently, in the aftermath of the pandemic, it has again been the most identified the organisation being seen as a relaxed large family. At the same time, the pandemic became a challenge to find new ways of working, ideas, and processes. The initiative of individual workers is valued. The experienced pandemic has reduced the identification of formal rules and policies, but in contrast, a trend to promote innovation has emerged, bringing dynamism to the organisational culture.

Table 1
Cronbach's alpha coefficients.

Culture type	Cronbach's alpha coefficients by dimensions		
	before Covid-19	present	preferred
Clan	0.723	0.709	0.758
Adhocracy	0.713	0.753	0.723
Market	0.765	0.738	0.768
Hierarchy	0.821	0.815	0.735

source: own research

Table 2

Dimensions of organisational cultures – highest mean score and dominant culture type.

	Dimensions					
	Dominant characteristics	Organisational leadership	Management of employees	Organisational glue	Strategic emphases	Criteria for success
<i>Before</i>						
mean	38.7	33.5	38.5	35.5	30.5	35
SD	29.2	25.1	31.4	26.8	33.6	21.1
culture	hierarchy	market	clan	clan	hierarchy	market
<i>Present</i>						
mean	39	38	41	34	40.5	32.8
SD	11.3	15.6	12.8	12.8	10.1	16.8
culture	clan	market	clan	clan	adhocracy	clan
<i>Preferred</i>						
mean	44	36.5	51.5	39	45	42.5
SD	18.9	13.9	9.5	10.2	15.8	17.8
culture	clan	hierarchy	clan	clan	clan	clan

source: own research

In the preferred situation, there is clearly a dominant dimension Management of employees with dominant clan culture. Employees again prefer a friendly workplace environment, sharing values and goals with high loyalty.

Considering the distribution of each dimension in the types of organisational culture, it is evident at first glance that the friendly,

family-like clan atmosphere is a desirable type.

The standard deviation scores in time before Covid-19 have the highest values. This may be due to the time delay in the assessment of the organisational culture at that time.

Also, the standard deviation scores in preferred situation indicate a larger deviation away from the means in present situation, which are

Table 3

Cultural profiles of dimensions.

Dimensions	Cultural type	before Covid-19	present	preferred	difference before - present	difference before - preferred	difference present - preferred
Dominant characteristics	Clan	35.8	39	44	3.2	8.2	5
	Adhocracy	13.5	25.2	10	11.7	-3.5	-15.2
	Market	12	10.5	11	-1.5	-1	0.5
	Hierarchy	38.7	25.3	35	-13.4	-3.7	9.7
Organisational leadership	Clan	21	18.5	31.5	-2.5	11.5	13
	Adhocracy	14	21	15	7	1	-6
	Market	33.5	38	17	5.5	-16.5	-21
	Hierarchy	31.5	22.5	36.5	-9	5.5	14
Management of employees	Clan	38.5	41	51.5	2.5	13	10.5
	Adhocracy	15.5	29.5	14	14	-1.5	-15.5
	Market	11	15	13.5	4	2.5	-1.5
	Hierarchy	35	14.5	21	-20.5	-14	6.5
Organisational glue	Clan	35.5	34	39	-1.5	3.5	5
	Adhocracy	16	22	15	7	-1	-7
	Market	14	10.5	13.5	-3.5	-0.5	3
	Hierarchy	34.5	33.5	32.5	-1	-2	-1
Strategic emphases	Clan	27	11.5	45	-15.5	18	33.5
	Adhocracy	25	40.5	20	15.5	-5	-20.5
	Market	17.5	20	17	2.5	-0.5	-3
	Hierarchy	30.5	28	18	-1.5	-12.5	-10
Criteria for success	Clan	27	32.8	42.5	5.8	15.5	9.7
	Adhocracy	11	22.5	11	11.5	0	-11.5
	Market	35	23.2	20	-11.8	-15	-3.2
	Hierarchy	27	21.5	26.5	-5.5	-0.5	5
All dimensions	Clan	28.4	21.7	46.7	-6.7	18.3	25
	Adhocracy	13	20.7	15.3	7.7	2.3	-5.4
	Market	28.3	28.4	16.5	0.1	-11.8	-11.9
	Hierarchy	30.3	29.2	21.5	-1.1	-8.8	-7.7

source: own research

more consistent. This situation suggests a wider range of opinions from respondents, reflecting the experience of the pandemic.

Here a strong congruence with cultural dimensions reflecting the clan culture in the time before Covid-19, in the present and in the preferred culture is also demonstrated.

4.2. Cultural profiles of dimensions

Table 3 presents the values of the dimensions in each type of organisational culture in the pre-pandemic, current, and preferred state. It also captures the changes in their scores during the study periods. The highest value of the mean represents dominance in the type of organisational culture. The largest differences in the averages are highlighted.

4.2.1. Dominant characteristics

This dimension reaches its highest value before Covid-19 in the hierarchy culture (mean 38.7). It is only by a small margin (mean 35.8) in the clan culture. After the pandemic period, it has taken the lead in clan type (mean 39) and has prevailed as the preferred characteristic (mean 44). For the further development of the organization and its success, people absolutely see the conditions in a friendly open working environment.

The hierarchy type has seen a significant decline (mean 25.3), but is back to its pre-Covid-19 value on the desired dimension and is the second most preferred type. There was a large increase in values for the adhocracy type (from 13.5 to 25.1). This increase is quite expected, as it is related to the rapid implementation of new processes, service delivery methods, interactions with colleagues, students, parents of students, etc.

The preferred type suggests that perhaps teachers may feel exhausted by the innovations and new approaches they were forced to adopt during the pandemic and want peace or comfort, as the value falls even below the value and is the smallest (mean 10).

The market type has the lowest preference. Employees do not want to compete and do not agree to control the quality, quantity or meeting deadlines for their tasks. The situation could be explained by fatigue or burnout after a challenging pandemic period. However, against this reasoning is the fact that the lowest preference is also in the period before Covid-19 (Fig. 2).

4.2.1.1. *Summary of the preferred state.* Respondents most desired a friendly workplace environment, sharing of experience and knowledge, complemented by formal procedures and rules. A dynamic and competitive environment is rejected.

4.2.2. Organisational leadership

Most of the respondents rated leaders as considered hard-drivers (mean 33.5). Market type preferences increased even more during the pandemic (mean 38). However, it ranked second to last as the preferred type (mean 17) (Fig. 3).

The second most preferred type before the pandemic is Hierarchy, although its value dropped after Covid-19. However, respondents considered it desirable that leaders be good organizers, coordinators, and efficiency experts (mean 36.5).

The Leadership of the clan-type culture declined slightly during the pandemic, only to increase as the preferred type above pre-Covid-19 levels (mean 31.5). The leadership values that encourage the search for new approaches increased quite logically during the pandemic (mean 21). But their increased valuation is undesirable, according to respondents, and has fallen to pre-Covid-19 levels (mean 15).

4.2.2.1. *Summary of the preferred state.* Respondents require leaders first and foremost to be able to organize, to oversee work efficiency, and only then to be mentors or parent figures. Few respondents appreciate the effort to find and try something new.

4.2.3. Management of employees

In all three periods, there is an overwhelming predominance in the clan type. Teamwork, consensus, and participation are the most important for respondents (Fig. 4).

Longevity in position, predictability in the working environment is the second most desired type before the pandemic (mean 35). In the Covid-19 era, although preferences have decreased, they rank second as desirable, although the mean is lower than in the pre-pandemic era (mean 21). This fluctuation in the pandemic era is influenced by a shift in preferences towards the adhocracy type, but, as with the previous dimensions, it is not very desirable in the preferred type.

The management styles associated with innovation, flexibility, or competitiveness are rated the lowest by respondents (mean 14), as is management placing high demands on employees (mean 13.5).

4.2.3.1. *Summary of the preferred state.* The management style characterized by participation and consensus seeking is the most desired type. It is complemented by a demand for security of employment, conformity, predictability, and stability in relationships. Acceptance of high job performance demands coupled with a search for new challenges is not very welcome.

4.2.4. Organisational glue

The representation of clan and hierarchy types is at the same level

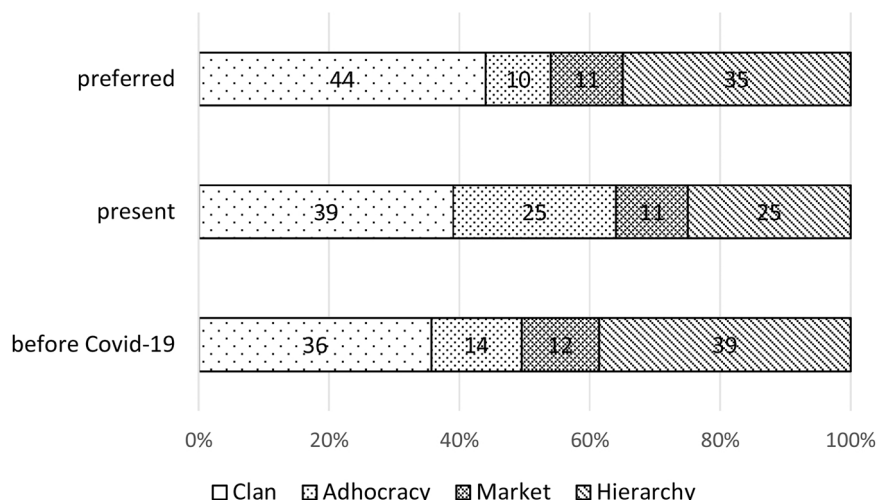


Fig. 2. (a) Dominant characteristics, source: own research. (b) Source: own research.

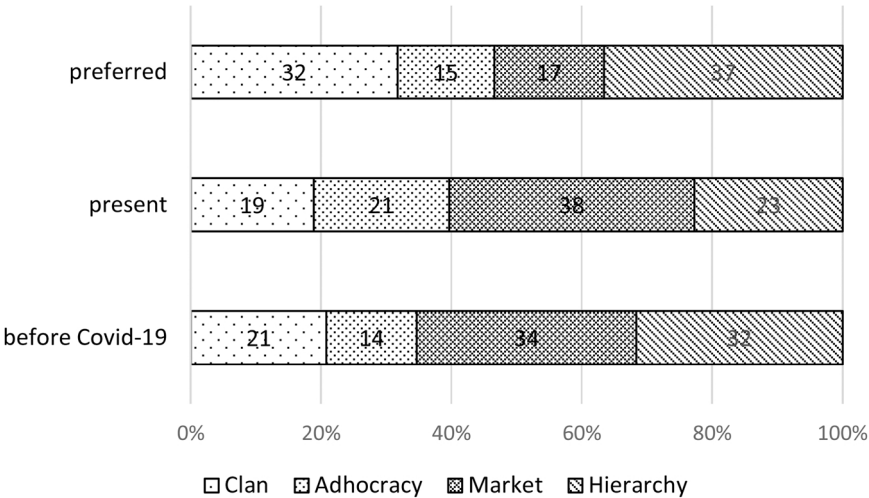


Fig. 3. (a) Organisational leadership, source: own research. (b) Source: own research.

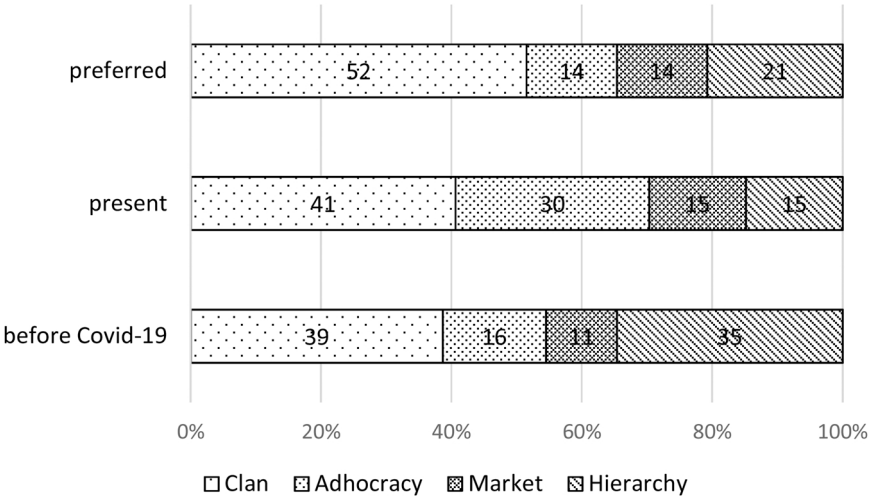


Fig. 4. (a) Management of employees, source: own research. (b) Source: own research.

before and after the pandemic. Based on their experience during the pandemic, respondents would prefer their high commitment to an organization (mean 39) whose operations will be structured and

formalized (mean 32.5) (Fig. 5). The orientation toward innovation and development increased substantially during the pandemic, but returned to pre-pandemic levels as a

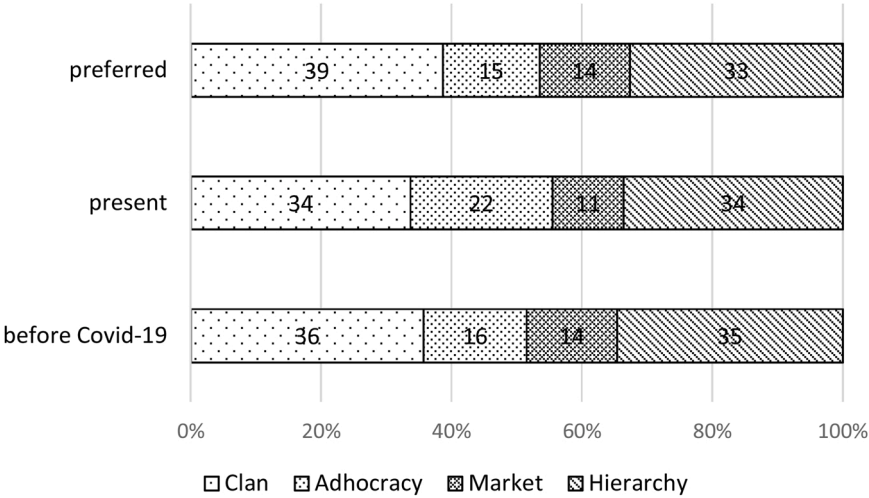


Fig. 5. (a) Organisational glue, source: own research. (b) Source: own research.

desirable dimension (mean 15). Ratings of goal achievement decreased during the pandemic, but the desirable state corresponds to the baseline (mean 13.5).

4.2.4.1. Summary of the preferred state. A friendly atmosphere full of loyalty and trust, where the smooth running of the organization is ensured by formal rules and policies, is what should bind the organization together.

4.2.5. Strategic emphases

In the pre-Covid-19 era, respondents say that their organizations most emphasized more permanence and stability (mean 30.5) (Fig. 6). However, their preference has gradually declined. The hierarchy type is replaced in the current period by trying new things and new challenges, which is typical for adhocracy type (mean 40.5). However, the desired state of looking for new challenges has dropped to mean 20, which is even lower than before the pandemic. Currently, respondents identify the organization's concern for human development as very low (mean 11.5). The current sense of disinterest in employees seems to be reflected in the preferred situation, where human development is most highly rated (mean 45).

Adhocracy and market types have similar trends to the other dimensions. Their pre-pandemic scores increase in the post-pandemic period to return to the pre-Covid period or even have lower values in the preferred scores.

4.2.5.1. Summary of the preferred state. Respondents consider human development to be the most valuable asset of organisational culture (mean 45). Trying new things, acquiring new resources, and meeting new challenges, competitive actions, measurement goals, and efficient, smooth operations are at comparable levels (means of 17–20).

4.2.6. Criteria for success

Respondents believe that in the pre-Covid era, their organization associated success with competitiveness (mean 35) (Fig. 7). Being competitive means having more students, which is reflected in the amount of subsidy from the state. Today, however, the value has noticed a sharp decline. Respondents ranked it as much less important as desirable than before the pandemic (mean 20).

The concern for people is the second most significant in the pre-pandemic era. The rating is on an upward trend and clearly has the highest value as a desirable dimension (mean 42.5). Smooth scheduling, working effectively with satisfied students, is on par with teamwork, and employee commitment before Covid. It returns to the pre-pandemic level of desirability after a dip during the pandemic (mean 26.5).

Innovation and new products saw a double the growth during the pandemic (mean 22.5). It returns to the pre-Covid-19 level in desirability in the idea of preferred dimensions (mean 11).

4.2.6.1. Summary of the preferred state. Respondents ask that the organization consider it a success to provide conditions for teamwork, human development, in general, to be there for its employees. All this while effectively managing and organizing work. Respondents are not interested in further challenges and innovations. Unfortunately, their awareness that it is necessary to "fight" for students and that it is necessary to compete in offering study programmes or fields of study is not quite clear.

4.3. Representation of organisational culture types

In the pre-pandemic era, hierarchy, clan, and market type are at a comparable level. Thus, respondents identified the emphasis of a formalised and structured work environment, emphasising procedures and regulations, which they linked to a friendly working environment and a desire to attract new students, i.e. to be competitive. However, success in the market is not tied to the dynamic and creative environment in the school. The mean for the adhocracy type is not even half of the averages of the other types (Figs. 8, 9).

Only two types of organisational culture were significantly affected by the pandemic. It required innovative approaches, which was reflected in increased mean in the adhocracy type, at the expense of decreased commitment to the organisation in the clan type. The preferred type clearly favoured shared values and goals, and team thinking (mean 46.7), less bound by formal rules (mean 21.5). Innovation and the ability to adapt to a turbulent environment (mean 15.3) reverted to pre-pandemic times. A results-oriented organization in which people are competitive and focused on their goals (mean 16.5) is less in demand than before the pandemic.

As stated previously, the school is an institution that has the extraordinary potential to be a community, so it logically prefers a friendly and relaxed environment full of collaboration and shared values. The gender distribution of the respondents, where 65% were women, may also have influenced the result. Women in general tend to work in a friendly non-confrontational environment (Gibbons, 2019).

However, the question arises here: The clearly preferred clan culture is far from the other types. Does this mean that the respondents believe that in a given environment they will be sufficiently self-motivated to perform their tasks, to seek new approaches and therefore do not need formal rules or control?

Or does it mean, on the contrary, that the respondents rely on the



Fig. 6. (a) Strategic emphases, source: own research. (b) Source: own research.

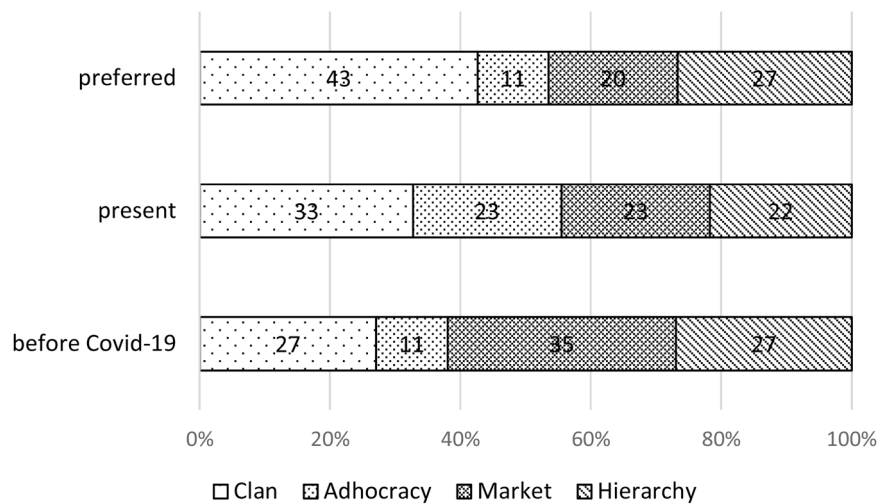


Fig. 7. (a) Criteria for success, source: own research. (b) Source: own research.

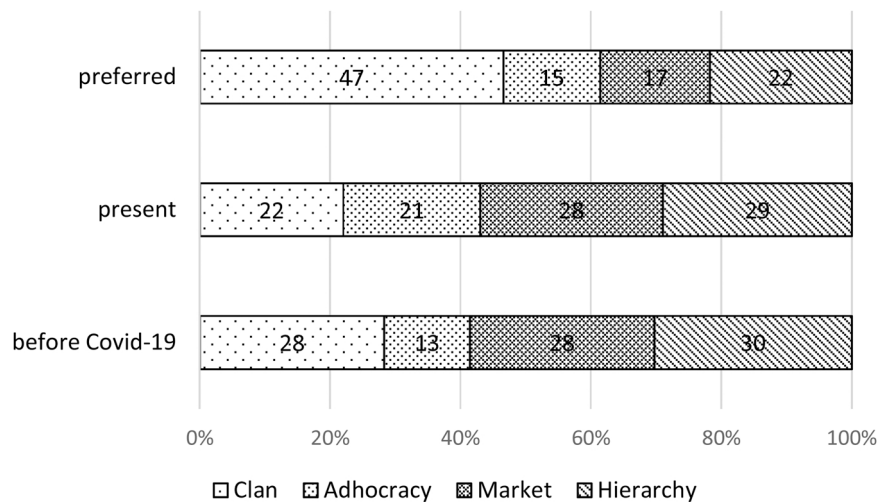


Fig. 8. Representation of types of organisational culture I, Source: own research.

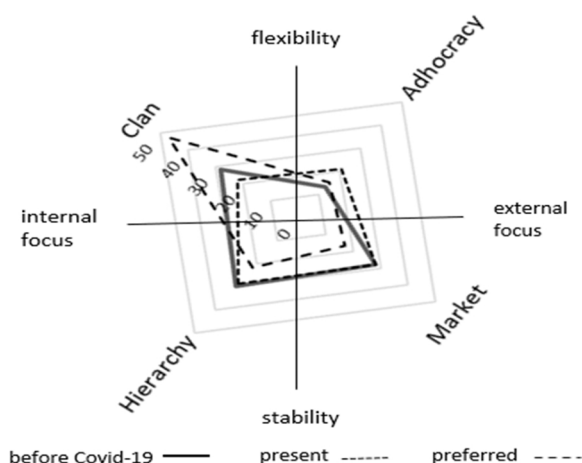


Fig. 9. Representation of types of organisational culture II, Source: own research.

family environment in the organization to be so friendly that it will condone shortcomings in work, non-performance of tasks, etc.?

The attitude towards the type of adhocracy is also something to think about. It is undeniable that there was a major disruption of routine work during the pandemic. Teachers had to master new technologies, new ways of teaching, and checking the knowledge of the students. It is possible that now, after returning to schools, teachers are tired and do not want to seek new challenges to, for example, make teaching more attractive. However, attractive teaching and quality teachers are among the conditions for a school to be competitive on the market. Respondents must look at organisational culture not only from their own position. Naturally, they want to have a calm working environment in which they will more or less cooperate with others. But at the same time, they must accept the pressure from the employer to deliver results, which is related to competition between employees and a focus on getting things done. If a school is unable to compete with other schools, it will not have students and therefore will not need to employ the original number of teachers.

The findings presented here are broadly consistent with the results of Grygorsky (2018). This author found that among the values of organisational culture, teachers give the highest priority to fair treatment of all employees, including the way they are rewarded (hierarchy), openness, and friendliness among colleagues (clan). Performance,

competitiveness, innovation have a much lower value (market and adhocracy type). Quality of service (market), and positive perception of the school by the environment (market) were the values that finished last on the list of importance of values for school staff. Adherence to set processes and quality management is considerably more important than, for example, the quality and attractiveness of the courses of study.

Debski et al. (2020) reached a different conclusion in their research. As a desirable organisational culture, it was predominantly hierarchical culture. As in the research presented here, Krajcsák and Kozák (2022) note the impact of remote working on organisational culture. They conclude that when hierarchy culture is dominant, as identified in this research (before Covid-19), very undesirable shifts will occur. All types decreased except the clan type. Their conclusions were not confirmed here. Significant changes occurred only for the adhocracy type (increase in values), and the clan type, on the other hand, experienced a decrease in values.

5. Learned lessons

This study has empirically demonstrated the impact of Covid-19 even in a specific area such as organisational culture. It has been shown that a crisis, not only an economic one (which schools, unlike other entities, were not threatened with), forces schools to look for new approaches to work and to innovate. It has also been shown that the extreme shock that the pandemic was had an impact on changing organisational culture in a relatively short time.

The public organisations also need to be competitive and try to retain/gain customers (students). The changing environment puts pressure on finding new approaches and processes, which was confirmed in the case of secondary schools, too. The friendly organizational culture of the clan has transformed into a dynamic and creative culture of adhocracy.

The tension and increased effort during the pandemic had a negative impact on the teachers and their desire for further innovation, which was reflected in their desire to return to the original organizational culture characterized by a friendly environment and sharing of experiences and little pressure for creativity.

The findings offer *practical implications* for school principals. Managerial practices that overemphasized competition and efficient performance with a focus on gaining a sustainable market position could conflict with cultural values that emphasize the sense of family working environment and formal procedures that were identified as perceived values associated with clan culture. It can direct school principals to reflect on school values and support the creation of a healthy organisational culture through strategies that ensure the adoption of values by educators as they operate in an environment of competing values. The findings especially in the individual dimensions of organisational culture types have also a practical contribution to government policy-making and strategic planning related to public education cultural creation or change.

6. Conclusions

The aim of the research was to use the OCAI method to identify possible changes in the types of organisational culture and its dimensions in public secondary schools in three situations, namely, pre-pandemic, post-pandemic and preferred type.

The organisational culture was also found to be affected by the pandemic. The clan type rating decreased during the pandemic, but as a preferred type, it achieved an exceptional rating compared to the other three types. The rating of the hierarchy type has gradually declined, and as a preferred type it has the second highest rating. The rating of the adhocracy type increased significantly due to the need to find new ways of working and using technology during the pandemic, but it reached the lowest value as the preferred type. The market type rating was not affected by the pandemic. However, as a desired type, it has only slightly

higher preferences than adhocracy.

As Furnham and Gunter (2015) stated, cultures that are "good" in one circumstance or time period may be dysfunctional in another circumstance or time period. Because culture itself is created and manifested in different ways in different organizations, it is not possible to say that one culture is better than another, only that it is different in some way. There is no such thing as an ideal culture, only an appropriate or suitable culture.

However, modern institutions need to be flexible, innovative, able to evolve, and shaping organisational culture can support the process of it (Komorowski et al., 2021).

6.1. Limitations

The data reflect the perceptions of the attributes of organisational culture, without objective measures. A retrospective assessment of the characteristics of types of organisational culture in the pre-Covid-19 era may have been inaccurate due to the time delay. This is evidenced by the standard deviation values, which are much larger in the pre-pandemic dimension assessment than in the other two situations. The gender distribution of the respondents may also play a role. Women constituted 65% of the educators interviewed. However, the percentage is consistent with statistics on gender representation in public secondary schools, where males make up 40% of teachers (www.msmt.cz). The age composition of the respondents was certainly reflected in the results, with 45–49 years being prevalent (23%). Younger people are more often involved in organizations with an innovative and supportive culture (Mohelská & Sokolová, 2018).

Results about organisational culture and resistance to other changes imply the challenges for further *research*. In this way, it can be concluded to which traditional values, values of the new organisational culture, and resistance to change are really present. It would be interesting to examine the organisational culture from the perspective of subculture in the school.

Other opportunities for future investigation can be seen in the relationship between organisational culture and virtual work environment, e.g. the influence of the relationship between teachers and students and vice versa; which factories can help in prosocial behaviour in teams in situations of high or low virtuality; what is the relationship between organisational culture and well-being of teachers, or work-life balance of teachers; or how an effective change of organisational culture can contribute to employee loyalty in times of shocks such as the pandemic.

The organisational culture is highly fragmented and constantly changing. Learning about culture through typologies has its limitations, as each type is a simplification, because in most of them there are features of several cultures. Instead of taking a limited view of organisational culture that encourages fragmentation. Jung et al. (2009) prefer to explore it from a plurality of perspectives, each offering different insights and approaches. Cultural assessment can be a starting point to solve problems, but also a way to create problematic solutions (Smit, 2001).

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CRedit authorship contribution statement

Marie Mikušová: Conceptualization, Methodology, Writing – review & editing. **Naděžda Klabusayová:** Investigation, Writing. **Vojtěch Meier:** Data curation.

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