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Organizational culture and leadership as facilitators of creativity and innovation: Insights from the ICT sector in Poland in a post-COVID-19 reality

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Abstract

Aim/purpose – Creativity and innovation are crucial for attaining a competitive advantage for organizations. However, dynamic changes in the environment, like the ones induced by the COVID-19 pandemic, and also other developments force scholars and practitioners to critically assess solutions once considered valid and functioning. The pandemic has affected the ICT sector in two ways, on the one hand, by impacting organizations' work and operations and forcing employees to work remotely, and on the other, through the global transition to a virtual world. This shift has forced the ICT sector to act quickly and deliver. Adopting an interpretive approach, this research aims at identifying these characteristics of an organizational culture and leadership style which foster creativity and innovation.

Design/methodology/approach – As a result of the adopted interpretivist exploratory approach, a qualitative research design was chosen. 19 in-depth interviews with representatives of the ICT sector in Poland were conducted. A purposeful and theoretical sampling was used. For the analysis, a combination of deductive and abductive reasoning was employed.

Findings – The analysis has shown that a pro-innovative leader should have traits of all the leadership styles: transformational, authentic, and servant, with an additional, new component – cooperative leadership. A pro-innovative organizational culture should foremost be characterized by openness. The importance of open communication but also openness towards the possibility of making mistakes was emphasized.

Research implications/limitations – The theoretical implications include the presentation of characteristics of a pro-innovative organizational culture and leadership style in a post-COVID-19 reality but also a very specific context of the ICT industry. The paper also contributes to the literature on leadership by introducing the cooperative leadership style.

Originality/value/contribution – The originality of the paper lies within the adoption of the interpretivist approach and a new perspective on well-known processes. The value of the paper is that the analysis has been conducted in the most innovative sector, the ICT sector, considering the impact of COVID-19 on its operation.

Keywords: innovation, creativity, organizational culture, leadership.

JEL Classification: M14, M15, O31.

1. Introduction

Creativity and innovation are perceived as the key factors determining an organization's competitive advantage and thus success in the market (Valencia Naranjo et al., 2010). They are especially important in the Information and Communication (ICT) sector, which is one of the most rapidly changing sectors (Belt et al., 2009) and thus requires flexibility prompted by creativity and innovation (Drucker, 1985). The analysis of the ICT sector is of crucial importance as the development in this sector influences the development and success of almost every other industry sector and economy on the global level (Bestvina Bukvić & Đurđević Babić, 2019). The ICT sector plays a vital role in the growth of economies and the development of IT applications has significantly influenced every sector of the economy (Nguyen et al., 2019).

The importance of creativity and innovation has led scholars to attempt to gain a better understanding of the determinants of innovation. A number of studies have established that the drivers of creativity and innovation may be divided into four groups, including context, strategy, external communication, and organizational factors (Koc, 2007). Organizational factors are critical because they are an element that the company can actively influence and because, if mismanaged, they may lead amongst others to developers performing activities beyond their capabilities (Koc, 2007). As they are also an internal matter of the company, they contribute to the development of an organization's identity (Khan,

1990). A review of the literature suggests that individual factors are of crucial importance in terms of stimulating innovative behaviors of employees. Those factors include amongst others intrinsic motivation, past experiences, and self-efficiency (Hunsaker, 2022), but they also include contextual and organizational factors like the work environment, co-worker support, or managerial support (Bani-Melhem et al., 2018). Among the most critical factors that influence and foster creativity and innovation (including innovative employee behaviors) are effective leadership and the proper organizational culture (Hunsaker, 2022; Nguyen et al., 2019). Furthermore, there is a strong connection between these factors as the leadership style influences and shapes the organizational culture and vice versa (Hunsaker, 2022). Researchers also point out that despite a considerable body of research on the determinants of creativity and innovation the relationship between organizational culture, leadership style, creativity, and innovation has not been sufficiently researched outside of the West European and North American context (Nguyen et al., 2019). Therefore, the following paper contributes to the ongoing debate on drivers of innovation. First, it presents the Polish context as an example of the East European context, and second, it investigates a topic that can still be labeled as unresearched. The objective of this research is therefore to identify the characteristics of an organizational culture and leadership style that support creativity and innovation. Research has shown that organizational culture and leadership style are closely connected and foster organizational innovation (Li et al., 2018) Furthermore, considering the findings of Hogan and Coote's (2014) study, which demonstrated that organizational culture, encompassing values, norms, and artifacts, predominantly emanates from top management and influences line management, it is imperative to investigate these interconnected constructs collectively. Therefore, the paper aims at answering two main research questions: *What leadership characteristics support creativity and innovation in a post-COVID work environment in the ICT sector in Poland* and *What are the characteristics of a pro-innovative organizational culture in a post-COVID work environment in the ICT sector in Poland*.

Due to the dynamic technological and organizational changes in the ITC sector and the COVID-19 pandemic, the presented research is exploratory, as the authors wanted to discuss whether the commonly used understandings of organizational culture and leadership styles were still applicable in the new situation. Thus, the adoption of an interpretivist approach led to the exploratory nature of the paper, which in consequence is another contribution, as the presented research enriches the debate on organizational determinants of innovation by pre-

senting a new model of pro-innovative organizational culture and leadership style which are the results of the requirements of the ICT market in the post-COVID-19 reality.

Furthermore, as qualitative data and research methods seek to understand the meaning and associations of different factors rather than analyze relationships between variables (Anderson et al., 2019), we do not aim at proving that organizational culture and leadership foster creativity and innovation, as this has been done in previous research (Li et al., 2018) but we are rather interested in understanding those issues in their contexts. Thus, in alignment with the interpretive tradition we are concerned rather with understanding than explaining the phenomenon at a certain point in time and the Polish context, without transforming the concept into measurable variables (Lee & Ling, 2008).

In the following sections, the relevant theoretical background is provided, followed by a description of the research approach and methodology. Then the data and research results are presented. Finally, the conclusion, theoretical and managerial implications, as well as research limitations and further research directions are discussed.

2. Literature review

Creativity and innovation are very often used interchangeably. Although almost 30 years ago researchers advocated including the concept of innovation into creativity, which forced companies to nurture the creativity of employees (Khalili, 2016), it should be stressed that those concepts are not identical (Lenart-Gansiniec, 2019). The simple distinction between the concepts was proposed by Amabile et al. (1996) who defined creativity as a product of novel ideas and innovation as an implementation of those ideas into an organization. This is also the conceptualization of creativity and innovation used in this paper.

As creativity is one of the most important features of human capital (Lenart-Gansiniec, 2019), it is of crucial importance how human capital – employees are being managed in terms of leadership and whether the environment – in this case, the organizational culture fosters creativity and as a consequence innovation.

2.1. Leadership styles

Leadership styles have been broadly researched, which has led to the development of many typologies. Some of the most widely accepted and used types of leadership are transformational, authentic and servant leadership styles. The transformational leadership style stands out as the most extensively studied and widely recognized form of leadership (Khalili, 2016). Transformational leaders inspire and motivate their employees to surpass expected levels of performance (Bass, 1985). Bass (1985) identified four dimensions of transformational leadership: inspirational motivation, intellectual stimulation, idealized influence, and individualized consideration. These leaders are often described as dynamic, proactive individuals who possess the ability to guide others in embracing change (Ahangar & Rooshan, 2009). In contrast, transactional (non-transformational) leaders focus on maintaining the status quo and facilitating performance on clearly defined tasks to achieve performance objectives (Eisenbeiss et al., 2008). Current research indicates that transformational leadership has the potential to foster innovation and creativity directly and indirectly (Hu, Gu, & Chen, 2013; Jaiswal & Dhar, 2015; Khalili, 2016).

The concept of authentic leadership emerged as a response to corruption incidents in the United States during the early 20th century, leading to a shift towards ethical values in leadership (Avolio et al., 2004). Authentic leaders exhibit self-awareness and utilize their capabilities and the ethical climate to promote transparency, internalize moral perspectives, and facilitate positive employee development (Gigol & Sypniewska, 2017). Research suggests that authentic leadership may be more effective than transformational leadership in fostering innovative work behavior (Korku & Kaya, 2023).

However, servant leaders are characterized by their selfless commitment to assisting others in their growth. They prioritize the goals of the team and the organization over their own interests (Yoshida et al., 2014). The literature on servant leadership indicates that through their behavior, intentions, and values, servant leaders cultivate loyalty and respect among their followers (Walumbwa et al., 2010). Servant leadership has been associated with both innovative work behavior (Khan et al., 2022) and creativity (Ruiz-Palomino & Zoghbi-Manrique-de-Lara, 2020; Wang et al., 2021).

To summarize, transformational leadership primarily focuses on the organization, authentic leadership emphasizes self-development, and servant leadership centers around the well-being and development of followers (Balti & Karoui-Zouaoui, 2016).

A leadership style that has received limited research attention is the cooperative leadership style, which involves a shift in leadership values away from the hierarchical exertion of individual power, which may be self-serving, towards a collective commitment to collaborative efforts and the greater good. Hamstreet (2006) highlights that individuals in this style of leadership still possess authority and are responsible for significant decision-making, but they are more inclined to perceive themselves as integral members of a team working towards the betterment of the entire organization.

Research conducted specifically within the ICT sector confirms that a leadership style characterized by Tung and Yu (2016) as participative and supportive is positively associated with creativity. Leadership styles and their relationship with creativity and innovation in the ICT sector have not yet been extensively analyzed. Few studies have addressed the interplay of leadership style, organizational culture, and innovation (Kacem & El Harbi, 2014). It has been the subject of analysis as to its impact on employee engagement (Milhem et al., 2019). The effects of servant leadership on innovative work behavior and knowledge sharing in the ICT sector have been analyzed by Reslan et al. (2021). They found that both participative and transformational leadership styles are present in the ICT sector. Also, Kacem and El Harbi (2014) analyzed the impact of leadership on the implementation of innovations in SMEs from the ICT sector in Tunisia. They found a predominance of the transformational style within innovative projects and especially intellectual stimulation and accountability. However, they also noted the presence of transactional leadership in developing incremental innovations. Their research suggests that also characteristics of other leadership styles may influence innovation including participative leadership.

Given the association of all described leadership styles with innovation and creativity, the inquiry arises as to whether a unified pro-innovative and pro-creative derivative can be discerned. This derivative would be applicable within a novel post-COVID reality and specifically within the context of the Polish ICT sector. This following question serves as the primary research query in this paper:

***Q1:** What leadership characteristics support creativity and innovation in a post-COVID work environment in the ICT sector in Poland?*

2.2. Organizational culture

The influence of organizational culture on innovation has been subject to many analyses. Furthermore, there is an agreement in the literature about the important role organizational culture plays in innovation (Naranjo-Valencia et al., 2011). To be innovative organizations need to create certain conditions covering amongst others internal behaviors (Tylecote, 1996). Organizational culture can be defined as a set of norms, values, beliefs, hidden assumptions, and artifacts, that are shared by the members of an organization (Schein, 1990). Scholars believe that organizational culture may influence through the socialization process to help employees accept that innovation is a basic value of an organization (Hartmann, 2006). Researchers have also found that organizational culture impacts creativity and innovation (Ali Taha et al., 2016). However, as stated by Naranjo-Valencia et al. (2011), it is not clear which type of organizational culture furthers or limits innovation. Organizational culture has rarely been analyzed in the context of the ICT sector. Ul Haq et al. (2019) established that organizational culture and leadership are among critical success factors of Pakistanis organizations from the ICT sector. Mečev and Grubišić (2020) substantiated that organizational culture is a key indicator of performance in ICT organizations in Croatia. Also, Kacem and El Harbi (2014) found that certain cultural characteristics foster innovation in the ICT sector including fault tolerance, risk-taking, internal confidence, and partnership. However, there is still a need to further analyze this topic and especially ask market participants of the ICT sector about their understanding of factors contributing to innovation and creativity. Therefore, the second research question of this paper is:

Q2: *What are the characteristics of a pro-innovative organizational culture in a post-COVID work environment in the ICT sector in Poland?*

Furthermore, as suggested by Wszechborowska (2015), a coherence between the organizational culture and leadership style is important in terms of organizational performance.

It was, in particular, the ICT sector that experienced significant and far-reaching changes due to COVID-19 (Yang, 2023). The ICT industry has been given a new impetus for growth due to the COVID-19 pandemic, as the spread of non-face-to-face and contact-free communication technologies changes the whole ICT paradigm (Yang, 2023). The self-isolation policies introduced by the national governments in the early days of the pandemic pushed towards solu-

tions like online shopping, telework, tele-education (Sheth, 2020), thus making people rely more on non-face-to-face and contact-free technology, regardless of the purpose of such usage (MacIntyre & Wang, 2020). These non-face-to-face and contact-free technologies have also been very quickly accepted and adapted by individuals (Cui et al., 2022). The growth of the ICT industry is not likely to return to the pre-COVID situation. (Yang, 2023). Research conducted by Jasińska (2020) showed that due to the COVID-19 pandemic, the Polish ICT sector experienced an emergence of new market opportunities and an interruption of previously stable trends. It also experienced turbulences in the employment market, changes in the scope of projects, and increased importance of the ability to implement changes. As a result, we can see that the impact of the pandemic was twofold. On the one hand, the pandemic posed a threat to organizations and workers, just as it did to other sectors of the economy; on the other, it was the sector itself that was responsible for the tools and instruments that were supposed to enable us to function relatively normally during the pandemic, making it a kind of market opportunity for companies in the ICT sector to increase demand for creativity and innovation in the sector. However, an analysis of the literature shows that there is no research on the innovation drivers of the ICT sector in the post-COVID era. Therefore, we believe that there is a clear gap in the exploration of innovation and creativity drivers in the ICT sector as it has been shaped through the COVID-19 pandemic with an even greater emphasis on innovation, creativity and delivering solutions.

Research on the influence of COVID-19 on creativity and innovation showed that contrary to common beliefs the pandemic and the lockdown may have had positive outcomes in terms of increased creativity (Du et al., 2021; Mercier et al., 2021). It has also influenced innovation in organizations. In a recent study, the vast majority of executives stated that the pandemic is expected to fundamentally change the way organizations operate as it will have a lasting impact on customers and thus organizations, making business innovation crucial (Am et al., n.d.; Bârbulescu et al., 2021).

As the ICT sector is one of the most significant economic branches in emerging economies (Harbi et al., 2009), we believe that it is vital to understand where the ICT sector in Poland sees the drivers of creativity and innovation at this time and context setting.

3. Research methodology

Considering the aim of the paper and the interpretivist and exploratory nature of the developed research questions a qualitative approach was used. The goal of the paper was to examine what kind of organizational culture and leadership style enhance creativity and innovation in the context of the Polish ICT sector in the post-COVID-19 era. For this study, purposeful and theoretical sampling was used. This means that organizations from different branches of the ICT sector were chosen (gaming, software, and hardware companies) to ensure diversity in the sample and capture different perspectives on the research topic. Data collection continued until reaching the point of saturation, ensuring comprehensive coverage. Consequently, a total of 19 in-depth interviews were conducted with individuals from the ICT sector who held positions such as members of the board of directors, owners, or C-level managers. The participants were selected based on their qualifications identified by their respective organizations' owners or board members, ensuring their suitability for the study. This selection process ensured that the participants had relevant knowledge and experience in the ICT sector in Poland. The sample structure based on the size of the company has been presented in Table 1.

Table 1. Sample structure

Number of employees	Respondents
Up to 50 employees*	Respondent # 7 Respondent # 15 Respondent # 16 Respondent # 17
From 50 to 250 employees	Respondent # 1 Respondent # 3 Respondent # 4 Respondent # 8 Respondent # 9 Respondent # 10 Respondent # 12 Respondent # 14 Respondent # 19
From 250 to 500 employees	Respondent # 11 Respondent # 13
More than 500 employees	Respondent # 2 Respondent # 5 Respondent # 6 Respondent # 18

* This category includes IT teams/departments employing less than 50 employees that are part of a bigger organization, including consulting, production, or international companies.

Source: Author's own elaboration.

The conducted interviews were semi-structured conducted by the author. During the interviews questions about the following topics were asked:

1. Employee and team characteristics supporting creativity and innovation and how employees are being selected for particular projects.
2. Implemented actions and initiatives, that support creativity and innovation.
3. Characteristics of a pro-innovative organizational culture,.
4. Implemented actions and initiatives within human resources management (HRM), research and development (R&D), and knowledge management that support creativity and innovation.

During the interview follow-up question were also asked to gain a deeper understanding of the issues discussed.

The average duration of the interviews was around 60 minutes. The interviews were conducted from February to May 2021. Due to the COVID-19 pandemic, the respondents were given the choice as to the arrangement of the interview. Most respondents opted for a remote interview conducted using videoconferences on Zoom. Three respondents chose a face-to-face interview. Those interviews were conducted in the workplaces of the respondents. The permission to record the interview was obtained in all the cases. After completing interviews transcript, its quality was verified by the author. The interviews were analyzed using MAXQDA software. A combination of deductive and abductive reasoning was used. Deductive reasoning was applied in the creation of codes related to pro-innovative organizational culture. The passages describing the organizational culture and its characteristics were sought using line-by-line coding. While analyzing the empirical material and iterating between the data and theory by way of abduction, it was found that the recurring categories in all the interviews were the characteristics of innovation-supportive leadership, which was then incorporated into the analysis process. The entire coding process had the same pattern. First, the entire empirical material was reviewed and then coded with open codes through line-by-line coding and paraphrasing. At the same time, some of the codes were assigned to pre-imposed categories like the organizational culture described. However, the process was not limited to these categories, thus fragments that did not fit into these pre-defined codes were also coded. Subsequently, employing an iterative process with the relevant theoretical framework, the initially generated codes were organized into axial codes. These axial codes were further refined through selective coding, entailing the careful selection and integration of relevant categories. This iterative process culminated in developing the final aggregated theme on leadership style. In the case of or-

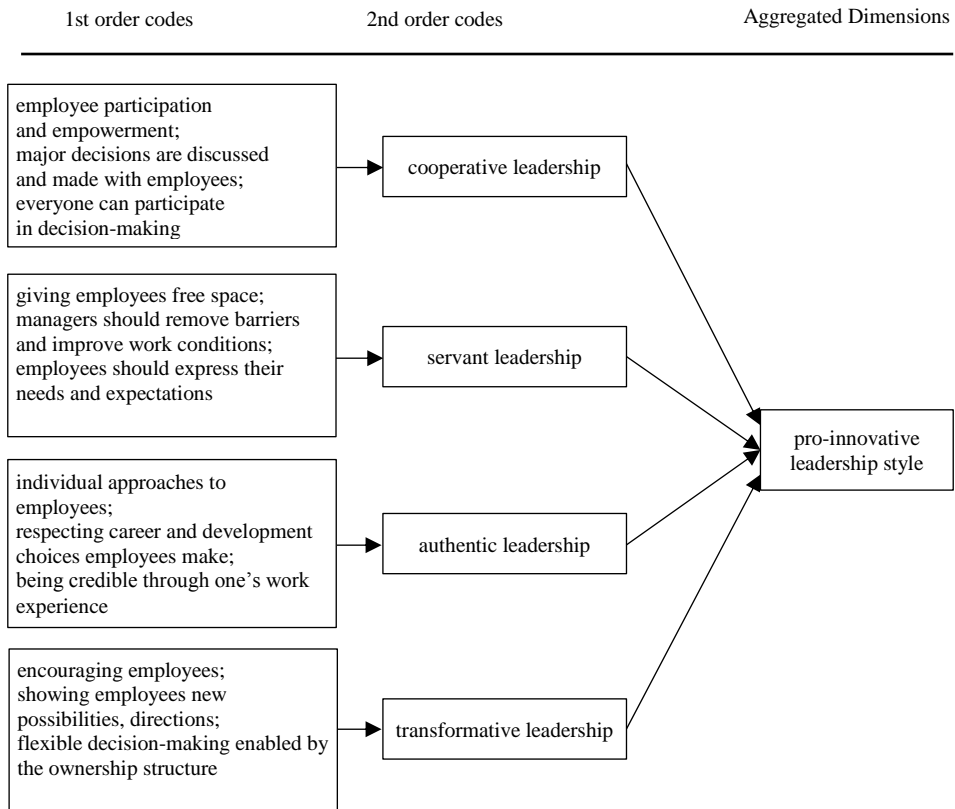
ganizational culture, the final aggregated theme was derived through narrative analysis with the support of existing theories, and the coding process concluded with axial coding.

An adapted Gioia approach to data analysis (Gioia et al., 2013) was used. The first-round pass of coding was made using predefined codes, however, already during the first round of coding, new codes inductively emerged, thus while analyzing the following interviews the list of codes evolved. After adding new codes, previously analyzed interviews have been analyzed again to verify if this change affected previous material. This approach allowed for the determination of the saturation point. The audit trail, collaboration, and disconfirming evidence validity procedures were used to ensure the quality of the analysis (Creswell & Miller, 2000). The quotations for the paper were chosen separately by the author and an expert not involved in the research project, then discussed in a common session during which the final selection was made.

4. Research findings

The first research question, about pro-innovative leadership, was not included in the original semi-structured interview guide. However, the topic emerged during the analysis of the interviews as a recurring one brought up by the respondents themselves. To see whether all respondents mentioned the topic themselves, the author chose an approach to ask about leadership only if the respondent did not mention it themselves. This was not the case though as all of the respondents spoke about this topic themselves, which additionally points toward the importance of this topic as a determinant of creativity and innovation in their eyes. The analysis of this issue was conducted through abduction and the emerged data structure has been presented in Figure 1. Additional interview quotes and information about the number of coded fragments have been included in Appendix 1.

The data analysis showed that a pro-innovative leadership style combines characteristics of four different leadership styles. The pro-innovative leader should take from the transformative style the importance of inspiring people towards new possibilities, which are important from the organization's point of view, and encourage them to act. A pro-innovative leader should also adopt some traits of an authentic leader especially their individual approach to employees, the respect shown to employees, i.e., in their career and development choices and they should be credible through their own work experience.

Figure 1. Pro-innovative leadership style – data structure

Source: Author's own elaboration.

Furthermore, the pro-innovative leader should also embrace elements of the servant leadership style. Respondents often stated that their role or the role of the managers in their firm is to remove barriers and obstacles and create a work environment where the employees can thrive. Respondents stated that especially for promoting innovation and creativity it is important to give employee space, a free hand in decision-making. Respondent # 1 explained:

It is the individual approach to people and respecting their development directions and also showing them this perspective means that it is not that I, as an employer, see you as an executor of my orders, it is a little what Steve Jobs said that we do not hire people to tell them what to do, we hire people to tell us what to do...

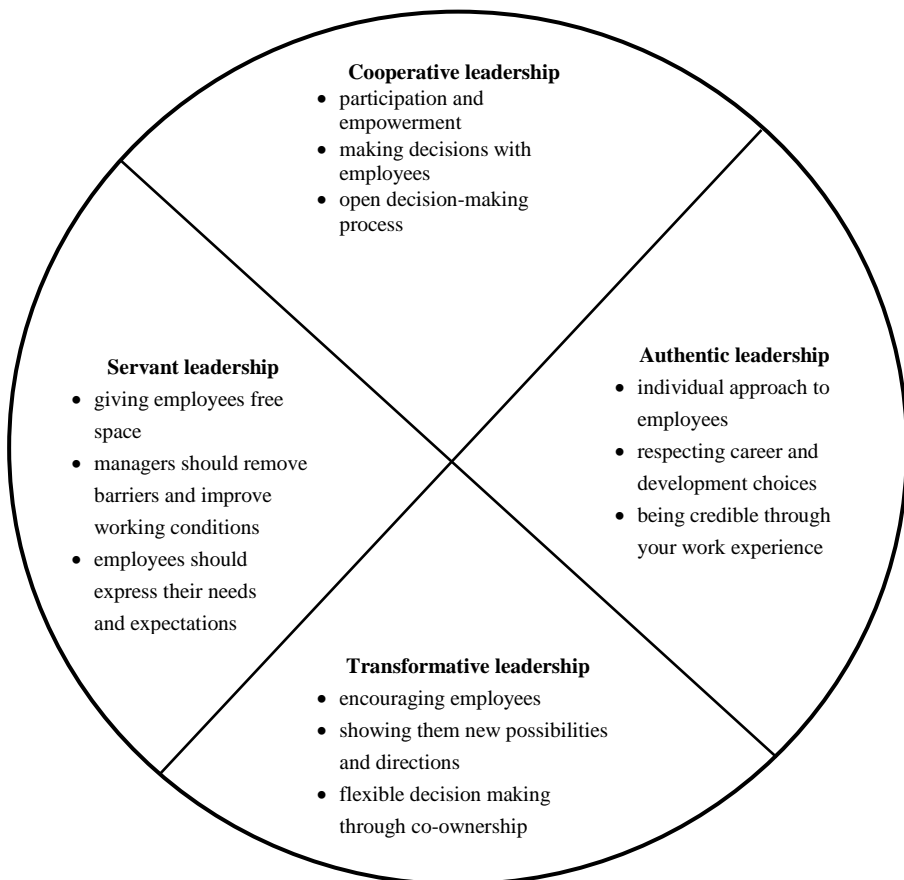
Finally, respondents pointed toward characteristics, which can be classified as cooperative leadership and partially result from the organization's distinctive form of ownership – a cooperative where employed workers become owners at

the same time. However, also more traditional organizations presented characteristics of this type of leadership by stressing the importance to include every employee in the decision-making process highlighting the optional and voluntary character of this participation, as summarized by Respondent # 14:

We encourage each employee to contribute to this company as much as possible and to bring their ideas, if they have an idea, they should do it.

Still, it should be noted that, as it were, in opposition to this form of action, one of the respondents stated also that having one (private) owner is very beneficial in times of dynamic changes as it allows for quick and flexible decisions. The question of the pro-innovative ownership type remains open. The analysis of the data has led to the development of a pro-innovative leadership model, presented in Figure 2.

Figure 2. A model of the pro-innovative leadership style

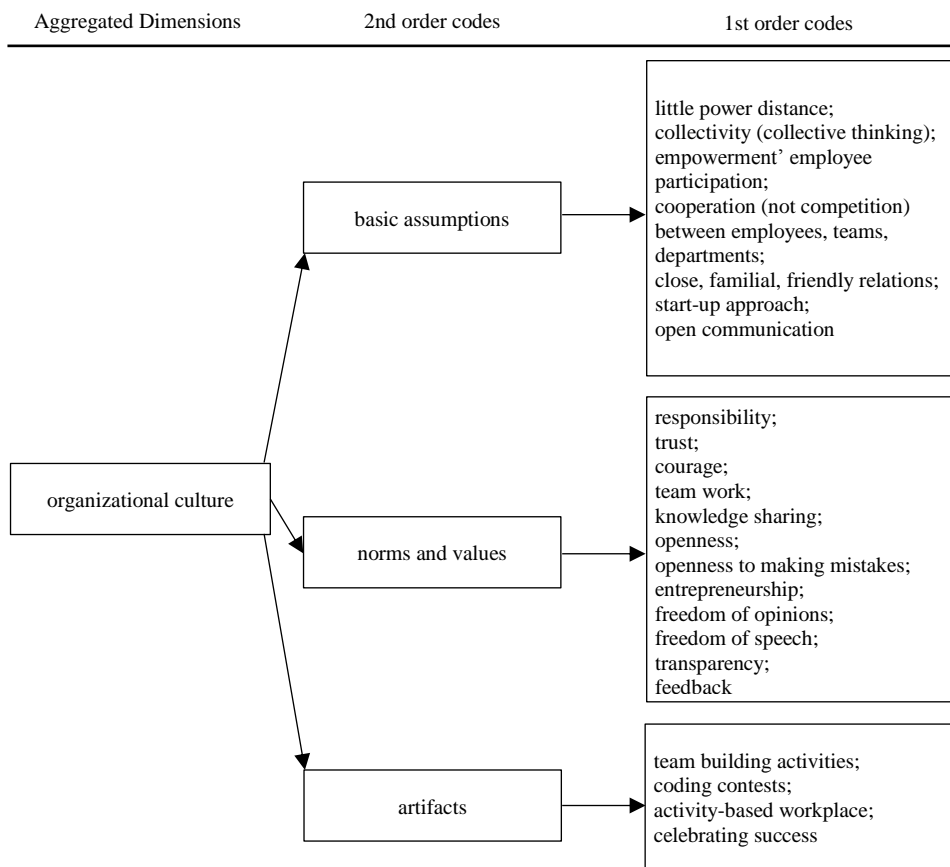


Source: Author's own elaboration.

This model shows that the pro-innovative leader should incorporate characteristics of four leadership styles: transformative, authentic, servant, and cooperative leadership.

To answer the second research question, about the characteristics of a pro-innovative organizational culture a deductive approach was selected, as the author intended to group the elements into components of organizational culture distinguished by Schein (1990). The results of the analysis have been presented in Figure 3. Additional interview quotes and information about the number of coded fragments have been included in Appendix 2.

Figure 3. Pro-innovative organizational culture – data structure



Source: Author's own elaboration.

Respondents were quite consistent when speaking about the organizational culture and its elements that support creativity and innovation. First, they mentioned little power distance, which characterizes the relationship between the employees and their managers, which strongly influences the perception of the organizational structure and hierarchy.

Another strongly highlighted element of the basic assumptions was collectivity in terms of collective thinking and the importance of cooperation on every level in the organization. The importance of collective thinking was emphasized, i.e., by Respondent # 5:

If someone is working on a project and someone needs help, it's more important that you help them than that you deliver your stuff. The collective is more important, with less individuality and more collective delivery. This culture of people being close is most important.

Also, Respondent # 7 stated the importance of:

...no rivalry is complete, there is pure cooperation and support when it comes to both technical and non-technical topics.

This helps to build a close, familial, friendly relationship between employees.

The crucial importance of open communication is closely related to the little power distance, which has significant implications within the norms and values of a pro-innovative organizational culture. Another basic assumption, which was strongly highlighted was empowerment and the connected employee participation and initiative, as mentioned by Respondent # 15.

Also, one respondent (video gaming industry) stated, that:

There was such a culture like a growth culture, such a start-up culture, everything is growing, we're scaling everything, not even a start-up just a skill-up as some people say, everything is growing, there's cash, cash is being thrown at anything, kind of a Wolf of Wall Street kind of atmosphere. Well, this has brought super results in terms of innovation. (Respondent # 9)

Most norms and values of the pro-innovative organizational culture directly derive from basic assumptions. What was highlighted by all respondents were the norms and values, which derived from openness as the already mentioned feedback (and the culture of giving and receiving feedback), freedom of speech and opinions, knowledge sharing, and most important openness towards making mistakes – not only the possibility of making them but more of the inevitability of mistakes and failures happening. The importance of it was highlighted by Respondent # 8:

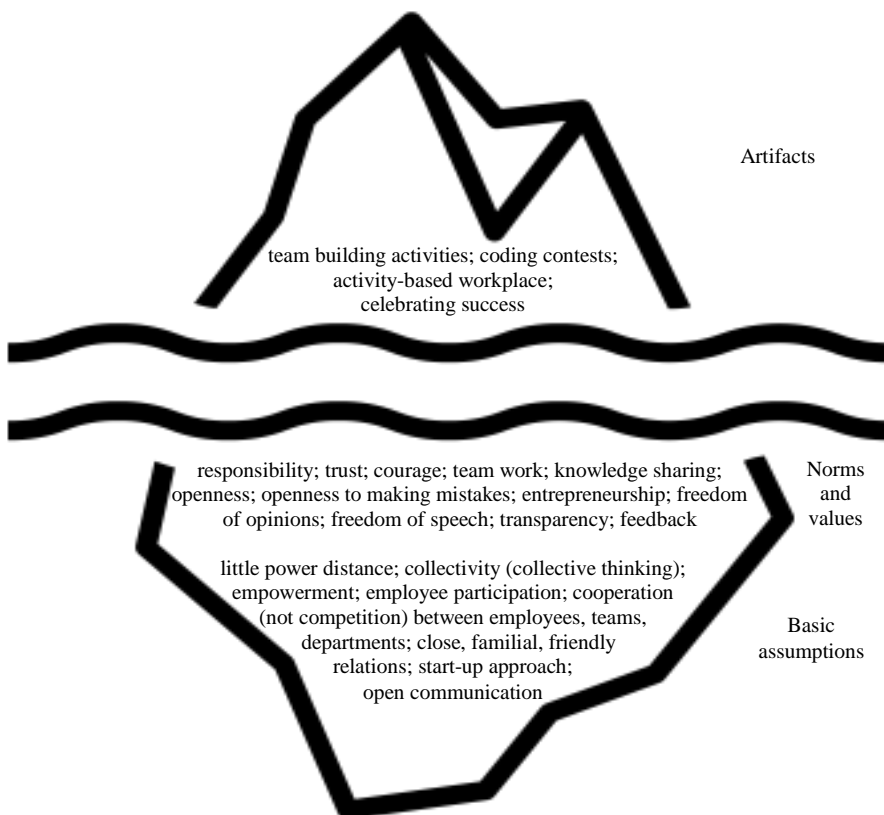
The most important thing in all of this is that we try to allow people to perform actions regardless of the effects. That may be too big a word, but with the assumption that the consequences don't have to be positive forever. We don't witch-hunt at the moment of failure, but rather learn, or try to learn... just such an approach, to learn lessons from failures and successes (...). This also supports innovation, in my opinion. The more people know about the history of a company and what ups and downs it has had somewhere, the easier it is also later not to make the same mistakes.

This openness is therefore a strong tool for nurturing psychological safety among employees.

Respondents mentioned also other values (listed in Figure 3), however, the norms and values resulting from the assumption of openness were the most significant and most often highlighted ones.

Finally, some respondents mentioned elements and initiatives, which were qualified under artifacts, like team building and integration activities, coding contests, or innovation contests (which in most cases were connected with a financial reward for the winner or the winning team). Respondents also mentioned shared celebrations of success or successful initiatives. They also referred to the design of the workplace, which apart from being simply attractive was a way of building team spirit and a sense of community, through collaborative space design and task planning but it was also a measure for the implantation of the emphasized openness. Adopting the analogy of the iceberg to portray organizational culture, a model of the pro-innovative organizational culture has been developed and presented in Figure 4.

Figure 4. A model of the pro-innovative organizational culture using the iceberg analogy



Source: Author's own elaboration.

This model summarized the indicated characteristic of the pro-innovative organizational culture which emerged through the analysis of the interviews.

5. Discussion

Nowadays being creative and innovative as a company is one if not the only way of staying competitive. This applies to the IT sector more than to any other industry. IT companies are racing to let in new products or updates at a dizzying pace. Those who cannot keep up disappear from the market. This dizzying pace in which the sector has been operating recently has been further agitated by black swan events like the COVID-19 pandemic, which has affected IT forms as service providers and employers. Therefore, these companies faced special challenges. On the one hand, creativity and innovation were necessary to maintain a competitive edge, while on the other, companies had to face internal challenges and, for example, the war for talent which took on a global dimension and entailed significant consequences in terms of, e.g., compensation, recruitment, onboarding, etc. As a result, it became necessary to remodel and often abandon what companies and scholars knew about organizational culture and leadership supporting innovation and creativity. Therefore, taking an interpretivist approach, it was decided to “take a step back” and, through exploratory research, try to outline what a pro-innovative organizational culture and leadership should look like. This was the focus of this article and the basis for asking the three research questions.

Regarding the first research question related to the pro-innovative leadership styles, the analysis showed that instead of focusing on one leadership style, the organizations introduced a mix of four styles. The existing literature already emphasized the influence of transformational leadership (Khalili, 2016; Nguyen et al., 2023), authentic leadership (Černe et al., 2013; Muceldili et al., 2013), and servant leadership (Chen et al., 2022; Yoshida et al., 2014) on innovation and creativity. According to Lee et al. (2020), who performed a wide meta-analysis, transformational leadership is especially successful in fostering innovation while authentic leadership fosters creativity. However, to the author’s best knowledge, no research points toward a cooperative leadership style. There is some research on the influence of the cooperative as a business format and its influence on creativity (Morlà-Folch et al., 2019). Still, the issue of leadership style in such organizations and its influence on creativity and innovation presented a gap. As the conducted research suggested, this may be a new way, a new approach to

leadership, which may help to achieve further competitive advantage. The conducted research also showed that characteristics of all four leadership styles are equally important, which would not support the findings by Korcu and Kaya (2023) which gave the primacy to the authentic leadership style. It is more likely that, as mentioned by Balti and Karoui-Zouaoui (2016), each style has a different focus, and only by combining them into one leadership style, as suggested in the model, can the full potential of creativity and innovation be unlocked.

For the second research question, focusing on a pro-innovative organizational culture, the conducted interviews and the subsequent analysis allowed for the development of a draft model. The basic assumptions, norms, and values mentioned by the respondents were interconnected, which allowed to develop a coherent model with a strong focus on openness in terms of communication also in terms of being open to mistakes and failure which were perceived as a natural component of creativity and introducing innovative solutions. Thus, it is crucial to give employees the feeling of psychological safety and build the organizational culture around psychological safety. Previous research pointed toward psychological safety as a mediator between a high-performance work system and creativity (Agarwal & Farndale, 2017) or between ethical leadership and creativity (Tu et al., 2019). However, to the author's best knowledge, there is no research on psychological safety as an element of a pro-innovative organizational culture. Furthermore, the results presented in this paper have shown the importance of collectivity building the basis for teamwork and a strong emphasis on collaboration. The importance of collectivity is also visible, e.g., in the suggested pro-innovative perception of diversity management, where the focus on functional diversity and using it for achieving competitive advantage implies teamwork and this collective attitude, because only in a collective do the differences between employees have a chance to turn into synergy. The importance of openness and collectivity is also visible in the artifacts mentioned by the respondents, especially the design of the workplace because the physical space significantly affects equality, openness, and collectivity and thus also organizational creativity as already mentioned by Kallio, Kallio, and Blomberg (2015). Naranjo-Valencia et al. (2011) stated that it is not clear which type of organizational culture furthers or limits innovation. Previous research found that fault tolerance, risk-taking, internal confidence and partnership may foster innovation in the ICT sector. The conducted study allows us to supplement this list with additional norms, values, and basic assumptions as well as gives examples of artifacts that may help to foster the pro-innovative organizational culture.

Research conducted by Jasińska (2020) showed that the Polish ICT sector was influenced by the COVID-19 pandemic and globally the ICT sector experienced an acceleration as a consequence of the lockdowns. This research, which was conducted a few months into the pandemic, when the restrictions were slowly being removed gives insight into the managers' opinions already in the new reality. The pandemic influenced innovation in organizations as it has changed the way organizations operate (Am et al., n.d.; Bârbulescu et al, 2021). Thus, the presented models may fit the new post-pandemic reality better than the previous ones, based more on face-to-face interactions.

6. Conclusions

Creativity and innovation are among the key determinants of an organization's competitive advantage. They are strongly connected with the company's human capital because the employees are the "carriers" of creativity and enable innovation. Thus, scholars and practitioners should pay special attention to the processes directly affecting the workforce. Therefore, the focus of this paper was leadership and organizational culture, as internal determinants of innovation and creativity. For this paper, an interpretivist approach was chosen take a fresh perspective on well-analyzed processes. This interpretivist approach resulted in conducting qualitative, exploratory research. For the research two research questions were asked aimed at determining the characteristics of pro-innovative leadership style and pro-innovative organizational culture. The conducted interviews and analyses allowed us to answer the research questions. Therefore, the main purpose of the research paper has been fulfilled. The analysis of the data allowed us to develop a model of a pro-innovative leadership style, which is a combination of transformative, servant, authentic, and cooperative leadership styles. Drawing characteristics from each, it was possible to create a distinct model emphasizing the importance of an individual approach to the employee, the authenticity of the leader, the employee's openness, and participation in the decision-making process, or even transferring responsibility to them, removing barriers on their way and pointing them in new potential directions. Such a model may be particularly relevant in the post-COVID era, which has forced us to be self-reliant and take responsibility for our own work. These findings are also reflected in the proposed model of post-innovation culture that is consistent with the pro-innovation management style as it also emphasizes empowerment, participation, and openness. In addition, it points to a number of norms and values,

the importance of which may also have been amplified by the pandemic, such as trust, accountability, transparency, and broad openness.

The research paper has several theoretical and practical implications. The theoretical implications include the presentation of characteristics of a pro-innovative organizational culture, and leadership style in a post-COVID-19 reality but also a very specific context: the ICT industry. These characteristics should be included in future theoretical and research models on internal determinants of creativity and innovation. The paper also contributes to the literature on leadership by introducing the cooperative leadership style. The paper has also many practical implications. First of all, it shows managers how the most innovative sector shapes its organizational culture, which in turn fosters creativity and innovation. Therefore, it gives direct instructions on how to remodel those processes to become more innovative and creative. The paper also presents a pro-innovative leadership style, which can become a role model for managers, who would like to become pro-innovative leaders in their companies.

This paper is not free of limitations. Although the qualitative nature of the study is not a limitation per se, the presented results and conclusions should be treated as a starting point for further research, a quantitative study aimed at verifying the findings presented in this paper. A certain limitation of the paper is that the interviews were conducted only with representatives of owners, board members, or C-level management. It would be certainly beneficial to conduct follow-up research and verify the collected information with information from employees. It would certainly be interesting to collect information on how employees perceive the described leadership styles and organizational cultures and how they should be shaped so that employees would feel that their creativity and innovation can flourish.

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Appendix 1

2nd order codes	1st order codes (number of coded fragments)	Selected citations
1	2	3
cooperative leadership	<p>employee participation and empowerment (2)</p> <p>major decisions are discussed and made with employees (1)</p> <p>everyone can participate in decision-making (5)</p>	<p>“We encourage each employee to contribute to this company as much as possible, to bring his ideas, if he has an idea, he should do it.” (R15)</p> <p>“Another such aspect from the daily life of the organization is that any changes in the organization are very widely discussed with the staff. It’s not that everything is discussed with everyone, but for example, right now we are working on a career model for our organization. And this is done in many stages, and at all stages employees are invited to dialogue. And it’s not on the basis of drawing specific people, but whoever wants to participate in this activity, please come forward. People who want to contribute something to a particular topic are invited to such a dialogue.” (R15)</p> <p>“It’s going in the direction of such a model to give more autonomy to people, whoever wants to create a company is invited to do so, we are starting this process of implementing this. There is a dialogue with people, we want to go in this direction, say how you will deal with it, that is, whether it will be appropriate. This is an effort to make sure that people are not lost during such modernization.” (R15)</p> <p>“This is also involving certain people in the processes that make up the center. As we sometimes think about how to open an office, this kind of basically core working group is the coordination team, that is the managers, but there are also project managers and always these key technical experts of ours who can say, can speak kind of on behalf of the team. So it’s also such an additional element that they know they are important.” (R18)</p>
servant leadership	<p>giving employees free space (7)</p> <p>managers should remove barriers and improve work conditions (2)</p> <p>employees should express their needs and expectations (1)</p>	<p>“He just brought together people who have always had good ideas, who have always been able to approach problems a little bit in a different way, and he sort of added to those team people who are technologically incredibly volatile, so he gave this visionary person who is going to start adding technology to him, and at that point he sort of took all that everyday stuff away from them giving them room just to think, and from what I know it’s working pretty well.” (R10)</p> <p>“Management is not there to manage and steer all this on a short leash, we just give these people as much freedom as possible, because we think that people actually know what customers want from us. They are in the best position to meet those customer expectations, to guide that customer, and management is only there to make sure that those people get the best work here, to remove the logs from under their feet, and indeed that they can spend all that time on those important things.” (R15)</p> <p>“It’s not that I, as an employer, see you as an executor of my orders, it’s a bit like what Steve Jobs said, that we don’t hire people to tell them what to do, we hire people to tell us what to do.” (R11)</p>

1	2	3
authentic leadership	<p>individual approach to employees (5)</p> <p>respecting career and development choices employees make (2)</p>	<p>“At this point, I treat the employee not as a robot that I have assigned to perform a certain set of activities. If he performs them well, then good, if bad, then bad. Only I look at the employee at this point as a human being, not as a resource, here we have a bit of a collision because the concept of human capital or resource are such somewhat dehumanized categories.” (R11)</p> <p>“Usually when you join such a large organization as a Junior you should become Senior from Junior, then Specialist, then Manager. Once you’ve chosen one path, well, you usually follow that path, and in our company that’s not the case, because it’s considered that if you want to re-brand yourself go ahead, if you want to step down from a management position, or Manager, and start from scratch, go ahead.” (R6)</p> <p>“... individual approach to people and respecting their developmental directions” (R11)</p>
being credible through your work experience (2)	<p>encouraging employees (3)</p>	<p>“Because if I’m a line manager and I used to program in Java, now I’m in management, but I continue to understand what problems this person is facing. And now imagine that I am someone who does not have this experience, this person who could speak to me would be abstract to me for some time. Or I would be less reliable to such people if I were to advise something. So with us, this line structure is very much combined with the business structure, so I can honestly tell employees, it makes sense for your development, I did that. And that’s also how we encourage, because, for example, that person knows that I really did that. It works nicely because it’s authentic simply.” (R2)</p>
transformative leadership	<p>showing employees new possibilities, directions (2)</p> <p>flexible decision-making enabled by the ownership structure (3)</p>	<p>“Encouraging employees to share knowledge is already the role of managers to encourage. In some countries, this is more normal than in Poland, for example. In Poland we have now started a whole series of incentives for people with more experience here or there, sometimes it’s just a matter of specialization or knowledge of certain aspects of the market, just to talk about it in an informal, relaxed way so that there is no such a pomposness that someone will be perceived as arrogant or that he wants to promote himself by force, so it’s kind of my task to show that it’s normal, that it’s very much encouraged, and in general it’s the manager’s role to encourage.” (R19)</p> <p>“In such technological companies, it is generally based on competence. It’s not a formal relationship only I think that in most of these teams that produce new things, the leaders are the people who can inspire substantively their employees, they are not such formal managers.” (R1)</p> <p>“...showing them a new perspective” (R11)</p> <p>“The owners founded the company in 98, so they already have a couple of years on their shoulders, and as a result, they will be among those who will be retired in a few years. And they asked themselves what will happen to the company later on. That’s the one problem that a lot of IT companies face, the problem of continuity of ownership. There are some companies that pass on the descendant, and others sell. Descendants they didn’t consider, because they won’t manage to sell the company, then two or three years ago, large corporations were heavily buying companies in the market. And they received a couple of offers from companies that wanted to take over our company.”</p>

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<p>They didn't like this solution, because you have to listen to this buyer and his guidelines for a while and maybe they will be guidelines that will not be popular with the employees and that didn't suit them. They wanted to transfer the company to the employees in some clever way. To sell de facto. And they came up with the following thing, we set up a cooperative, it is such a creation that each member has the same number of shares, this was deliberately done by the owners, so that it would not be the case that everyone tries to grab as many shares as possible. Only employees can join this cooperative, when they are no longer employees, they have to leave it, and this cooperative slowly becomes the owner of the whole company. The cooperative now has 49% of the shares, in a few years it will have 100%, which means the employees will be the only shareholders" (R15)</p> <p>"Freedom of technology, certainly we can choose this technology freely, we take these best solutions, sounds maybe a little rigid, but in large companies, these big companies, changing this programming platform is difficult. Because it involves dozens of people, and it's not like with us, a team of 20 people can say ok, we are now switching to another language or to other programming methods. They can do it and the consequences are theirs alone. And this is often raised as this positive element, these building a program for this office these we want to distinguish ourselves with this, because we know that such freedom corporations don't have." (R18)</p>		

Appendix 2

2nd order codes	1st order codes (number of coded fragments)	Selected citations
1	2	3
	<p>little power distance (13)</p>	<p>“And it’s heard among employees that people are not afraid to talk to managers even at a higher level. The worst thing about these hierarchical organizations is the distance. If I have to talk to my boss’s boss, I’m afraid. And that, in my opinion, is not there. It is known that when you look very high up, this anxiety appears, it is known, whereas in our case it is relatively minimized. There were a lot of actions related to this, so that people are not afraid, so that the atmosphere is cool, and indeed, the atmosphere, this is one of the main and positive things mentioned at the feedback.” (R2)</p> <p>“I don’t feel a total hierarchy here, which means I both feel comfortable talking to my boss as I talk to my best colleague. It doesn’t feel like such a strong hierarchy that you’re under me, you’re working on me, and you don’t get to talk back to some Senior Manager because of your current position. It’s just a matter of your agreement that you’re in this position and not another, and it absolutely doesn’t affect interpersonal relations.” (R6)</p> <p>“Such team spirit is being promoted” (R18)</p> <p>“The collective is more important, less individuality and more such collective delivery. This culture of people being close is most important.” (R5)</p> <p>“We encourage each employee to contribute to this company as much as possible, to bring his ideas, if he has an idea, he should do it.” (R15)</p> <p>“There are very many such unofficial resource groups for, say, LGBTQ people. If these are groups from America they have their own group for ethnic minorities. There is also a very large organization specifically for women, it doesn’t restrict entry for men but is directed at supporting women in their development. So anyone who feels unique by age, education, sexuality, religion will find a place for them.” (R6)</p> <p>“Very important culture of cooperation, that people respect each other” (R11)</p> <p>“Culture of cooperation is very important” (R11)</p> <p>“Complete lack of competition” (R7)</p> <p>“Everyone has different ambitions, everyone wants somewhere, not everyone, but almost everyone somewhere wants to get promoted, and some minor frictions and conflicts have always been there, but there have never been such major games. I think this is such terrible cancer that eats away at any company where such things occur.” (R9)</p>
Basic assumptions	<p>collectivity (collective thinking) (4)</p> <p>empowerment (3)</p> <p>employee participation (ERG) (2)</p> <p>cooperation (not competition) between employees, teams, departments (10)</p>	

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	<p>close, familial, friendly relations (5)</p> <p>start-up approach (1)</p> <p>open communication (9)</p>	<p>“At the time when we were the most innovative, I think we were such a company, we, for example, never, for a long time, had these corporate rules, like ‘we are creative and fun and open,’ everyone has the same, we never had that and we had this rule just rock&roll, so there was this atmosphere just very, I don’t know what to call it, rock&roll and forward” (R9)</p> <p>The company supports [employees] in various life situations, so this also opens people up to each other, there is a lot of friendship in the company, a lot of such friendly relations.”(R12)</p> <p>“On the other hand, when it comes to this kind of culture in general, it’s very friendly and family-oriented.” (R16)</p> <p>“There was such a culture like a growth culture, such a startup culture, everything grows, we scale everything, not even a startup just skill up as some people say, everything grows, there is cash, cash is thrown at anything, such a Wolf of Wall Street kind of atmosphere. Well, and this has brought super results in terms of innovation.” (R9)</p> <p>“The culture and organization is based on such openness, communication. We have an organizational structure, of course, but there is no such thing as someone there from one team to another cannot ask for help, sometimes everyone also has some tasks, but I think that this culture and organization are fairly open as far as it can be in such a company that has more than 200 employees.” (R1)</p> <p>“What’s also great is that in the Nordic organizational culture, because we come from Finland, the Finns are such an open communication. It’s something that suits me personally very well, that I say what I think and tell it like it is, and I don’t have to think about how to present it, or how to turn the cat on its head to make someone guess that it was constructive feedback, you just tell it like it is. And it’s okay to say that you don’t know, and it’s okay to say it like it is, it’s mega cool.” (R3)</p>
<p>Norms and values</p>	<p>responsibility (1)</p> <p>trust (4)</p> <p>courage (1)</p> <p>team work (3)</p>	<p>“If I were to say what kind of company it is, the first association I have is that it is responsible for what it does and for the people who are here.” (R12)</p> <p>“I think that trust. What I mean by something like that, that there is no control over such a second employee, in the sense that someone has a free hand, but on the other hand also understands what the barriers are and the consequences when you cross those barriers so it’s also not such a trust I don’t know, maybe sometimes 100% is not, but in a certain way stubbed, somehow shaped, in the sense that ok, you have some trust but you can use everything in paradise but don’t eat the apple, in the sense of some rules are there and also the consequences of that.” (R9)</p> <p>“What’s cool here is that a lot of these ideas come through. These changes can be seen in this courage. Because it shows that this courage starts with a courageous employee, while also the company says that it also wants to be courageous.” (R18)</p> <p>“You have to be able to share this success with the team and accept that you didn’t work alone for this result even if you were a key part just that without the team it would have been impossible.” (R11)</p>

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	knowledge sharing (2)	<p>“It is so that we have a climate of knowledge sharing in the organization, because this is a key element. If employees are stoned towards each other, and if they treat each other as competition within the company for the same resources, and this resource is, for example, the attention of a superior or some respect, then at that moment they don't have such an impulse, an idea to share knowledge. That's because in this way they breed competition.” (R11)</p> <p>“On the other hand, the organizational culture I think, first of all, is very open.” (R8)</p>
	openness (7)	<p>“So also this culture is on the one hand very open, very friendly” (R10)</p> <p>“That's why we focus on a culture of openness” (R17)</p>
	openness to making mistakes (9)	<p>“And what's most important in this thing is that kind of culture, that what we say, so that people are not afraid to make mistakes. And because of that, this creativity and innovation works better, because people are not afraid to have sometimes strange ideas.” (R5)</p> <p>“There are no bad solutions, there are only inadequate solutions for a given problem, and we try if something does not work out, we also try not to blame people but only look for a solution so that one failure is not some kind of block to further creativity in the future.”(R7)</p>
	entrepreneurship (1)	<p>“Values, in our company we talk about these values like entrepreneurship. Each of us at the product level, as we work here, we want them to treat this as their mini-company, and this is also to encourage this thinking a little bit through the prism of my company, which gives such a signal: ‘invent, this product is your child, beautify it, change it.’ This is really a topic in our company that is often discussed.” (R18)</p>
	freedom of opinions, freedom of speech (respect) (4)	<p>“The best communicators are such employees who assume that they do not have to prove anything to anyone. They respect each other's competence.” (R11)</p>
	transparency (5)	<p>“... and such a transparent, I think this is a strong word that came up, because after this 2016, after the change of owners, the very change that I had the pleasure of leading, we have brought to a state in which every employee has the opportunity to get, or otherwise we try to put it out to them, but here already communication lies, unfortunately you know how much people hear and how much they learn from it, information even on at least the result. We do not hide practically any information from employees. It is known that there is some very specific information that we don't give, but there is really maybe 10% of it at the moment in relation to the 90 that every employee has access to in this area of knowledge management that I just mentioned launched in our Work Place tool, you can just go in and search, find information on virtually any topic” (R8)</p> <p>“The reason we share information with you is that we don't want to hide anything from you, that we're not up to anything, that we're not awful, that we want to be fair to employees, and indeed that's the main key of my operation, to be super fair to employees.” (R10)</p>

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	<p>feedback (4)</p>	<p>“There’s certainly a lot of this culture of asking questions and feedback, it’s used more in small groups, one-on-one, less so in larger forums. And you can see that it’s ingrained in the form, there’s no problem with asking questions, but it’s done in smaller groups.” (R13)</p>
	<p>team building activities (6)</p>	<p>“Also such team building stuff, people got mega close, in general one of my best memories actually from the company and many people say the same, there was just such a rock & roll atmosphere, let’s do something.” (R9)</p> <p>“... on Fridays such meetings over coffee, because before the pandemic, we had such Fridays, pizza on man-day, so we ordered a drink on Monday and breakfast on Friday, so employees integrated either in the meeting rooms or in the kitchen, and we make sure that it doesn’t just work but that there is a work-life balance. But we also want the employees to integrate, to talk about their private lives, not about the project itself. We try to take care of this so that there is a relaxed, family atmosphere and so that we get to know each other as well as possible at work and also on a personal basis. And we organize these meetings on Fridays, there is an invitation sent to this meeting. Some board game evenings are also organized, where employees can get together at a given hour for such a meeting, a colleague who is in charge of this gives a page with games and employees have access to these games and go in and play. On the occasion of Valentine’s Day we will prepare sweet tables, but it will be in the office, we will invite, we will divide the company into 2 parts and on one day half will come and on the other day the other half will come and we will organize such a sweet treat.” (R4)</p>
<p>Artifacts</p>	<p>coding contests (5)</p>	<p>“Often in general I participated in these hackathons, often people, for example, argued among themselves or, well, did not start at all because they argued in what technology they would do something, something like that. Total absurdities. And what we did was we did such a project, which was very cool but there was never time for it, but it was a company project that just fell on the list of priorities but everyone somewhere was like ‘Oh it would be cool to do that.’ Well we figured we would do a hackathon but in our own way, we rented a spa for 3 days, we went, we worked 10 hours each, everyone could so as not to neglect their families everyone could take a partner, kids, wife, anyone in the sense of family to this spa, there it was all-inclusive and so on and we worked intensely very, and then a few hours of partying and so on for 3 days and we did it in 3 days. Even leaving aside the return on that investment, because it cost us I don’t remember, I think it was 15 thousand zlotys, I suspect it paid for itself in an hour as the product was launched.” (R9)</p>
	<p>activity-based workplace (2)</p>	<p>“Now, for example, in the office, we are doing some activity-based working, which means that we are adapting the office to more collaborative work, in the sense that we are moving to a hybrid model, which means that people are supposed to do some work at home, where a programmer is supposed to do programming, then he sits at home and comes to the office once or twice a week, but in the office, it is more about planning, prospecting, some kind of conversations, collaborations, and now we are very much working on how to make this space in the office, to change it from a more desk-based system to one where people talk. There were some cool ideas here, too.</p>

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	celebrating success (6)	<p>The first thing that came to mind was let's make a conference room, but on the other hand, this team comes in, shuts up, talks and leaves and goes home, and we sort of came to the point where we made a lot of these open conference rooms, which means between the desks there are couches, we're going to do this in the coming months, couches, some kind of table, so that if someone wants to chat they can go there, but if someone walks by they'll hear what they're talking about, so someone can sit in a desk and listen with one ear. The kind of place that encourages the flow of information and interaction between people." (R9)</p>
		<p>"Also, the effort of employees is very much supported and often they are rewarded with such small things as bottles, blankets, chocolates, these are small things and often you can laugh about it, but on the other hand it is very nice when it is women's day and suddenly you get a surprise at home because the company just wanted to congratulate you for your effort" (R6)</p>