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A Framework for Innovative Culture Identification

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Abstract

Innovation is a valued intangible asset that is important for a company's competitiveness. A crucial part of corporate success is the creation of cultural values that foster innovation and creative behavior. Through a thorough review of previous articles, a scientific research gap in the literature regarding the relationship between organizational culture and organizational innovativeness has been identified. Based on resource-based view theory, the authors investigate theoretically and empirically the area of innovative culture attributes. The mixed research approach was used to examine evidence and the importance of innovative culture attributes and to determine differences between the view of managers and employees in rating innovative culture attributes at innovative large-size enterprises operating in the Czech Republic. In the first phase of the research, a qualitative personal semi-structured interview with managers responsible for innovation and change management was conducted to verify the use of proposed characteristics in companies. Then, a questionnaire survey was used to collect data and assess the importance of using identified characteristics of innovative culture. The data were statistically tested, and the results revealed the use of innovative culture attributes. Cluster analysis indicated which attributes should be used in tandem to maximize each attribute's potential. Based on these findings, a framework that defines the structure of innovative culture was created and can be used to diagnose the extent of a company's attempt to build an innovative culture.

Keywords: innovative culture, culture characteristics, organizational innovativeness, components, competitiveness, behaviors
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1. INTRODUCTION

Recent literature stresses that managers must acknowledge innovation as a crucial component of the organization if they want to be competitive; therefore, managers must support and create an innovative culture. (Anning-Dorson, 2021; Maier et al., 2014) Corporate culture is also presented as a major determinant for sustained superior performance and innovativeness of companies (Popa et al., 2017; Ulusoy et al., 2015; Kotkova Striteska & Zapletal, 2020; Khazanchi et al., 2007; Martins & Terblanche, 2003). The main reason is that it can help understand innovation as a core value and reinforce its commitment. (Zhao et al., 2018) More profoundly, shared

values, beliefs, and behavior expected of members that provide a corporate identity influence innovation in two ways. Firstly, through socialization processes, employees make assumptions about whether innovative behavior forms part of how the organization operates. Secondly, the structures, policies, practices, and procedures of the organization guide the employees on how they should think, feel and act (Martins & Terblanche, 2003). The innovativeness becomes the basis of every employee's activity, and innovation processes are implemented much faster and cheaper in practice (Kotkova Striteska & Prokop, 2020).

Moreover, empirical studies have confirmed that organizations whose cultures emphasize innovation, when resources are available, tend to implement more innovations and develop a competitive advantage (Tellis et al., 2009; Lee et al., 2017). Škerlavaj et al. (2010) tested the structural relationship between organizational learning culture and innovativeness and concluded that corporate learning culture has a moderate indirect positive effect on innovations and competitiveness. Hitka et al. (2015) state that building an innovative, customer-focused culture may provide an organization with a competitive advantage that brings the ability to quickly respond to the changes happening in the market in terms of environmental and changes in customer requirements. Ulusoy et al. (2015) state that the two most outstanding determinants of innovativeness were recognized as intellectual capital and organizational milieu, which consist of two components: organizational structure and organizational culture. Recently, the concept of innovativeness has often been linked with sustainability. In this context, Rosario et al. (2017) found that a culture emphasizing creativity, entrepreneurship and risk-taking is compatible with different forms of incremental, radical, marketing and organizational eco-innovations. This is the way to become more competitive in the market.

We see a clear consensus that culture is an enhancing factor for organizational innovativeness (Büschgens et al., 2013), but it is difficult to change (Jaruzelski & Katzenbach, 2012). Innovation management and corporate culture have been the subject of intensive research in the last few years (Martins & Terblanche, 2003; Khazanchi et al., 2007; Matzler et al., 2013). Nevertheless, Illishenko et al. (2018) state that the absence of standard views on the composition and structure of the innovation culture complicates the determination of relationships and interactions between its elements. There are numerous established elements of creative corporate culture, yet navigating among these overviews can be difficult. As Hogan & Coote (2014) stated, prior research does not sufficiently document the exact process by which organizational values shift into observable desired behavior. This article provides an overview of existing literature on innovative culture and innovative culture characteristics. There are more than 50 innovative cultural characteristics identified in this paper as there has been great interest in this topic among scholars. Based on numerous articles with different types of characteristics, we can say that it is difficult to make clear innovative culture construct for companies as there are many unstructured and fragmented views of different authors and not clearly defined construct. This research addresses this important gap and seeks to understand the managerial practices associated with an innovation culture better. Furthermore, the past study does not adequately address how to translate innovation-friendly ideals into desired executive conduct in practice and does not expose the links between these qualities. Therefore, it is meaningful to analyze innovation behaviors and connections between them, which contribute to the development of innovative culture.

To our best knowledge, none of the previous papers has used a comprehensive mixed-research approach to construct clarification that is used in this paper. We chose this research method as it gives a more thorough and all-encompassing picture of the observed issue. Thus, the main aim of this paper is to contribute to the conceptualization of innovative culture through the design of a framework that contains evidence and the importance of innovative culture attributes and the links among them. Specifically, the focus of the paper is to assess the "fit" between a company's environment and its innovative culture-building activities. This gives managers a clear picture of attributes that need to be addressed. The defined conceptual framework is a theoretical contribution of the article.

The remainder of the paper is organized as follows. The first section reviews the relevant literature to demonstrate the specific contributions and form a research approach leading to developing research questions and hypotheses. The second section presents a methodological framework of the study, while the third section provides the results of data analysis and discusses them from theoretical as well as practical points of view. The last section concludes the main findings together with the limitations of the study and outlines the directions for future research.

2. INNOVATIVE CULTURE CHARACTERISTICS AND MEASUREMENT

Innovative culture refers to a set of shared assumptions, values, beliefs, attitudes, and behaviors of organizational members that could facilitate the creation and development of a new product, service, or process innovation (Ali & Park, 2016). Besides new ideas and processes, innovative cultures generally support new ways of doing business and their underlying values act as a driving force (Kalyani, 2011). Therefore, innovative culture is often closely related to motives, strategic decision making and effectiveness (Wei et al., 2013). Assessing qualitative factors can outline the true financial situation of a business and can help predict future developments more accurately (Kuběnka & Myšková, 2019). In terms of the relative structure of ideas, attitudes, and assumptions, organizations differ in their cultural content. (Osibanjo & Adeniji, 2013). Changing the organization's focus to innovation often requires a change in the organization's general cultural orientation (Dobni, 2008; Yun et al., 2020).

To have a successful corporate culture, it is important to select, develop, and motivate its people to become committed not only to building high-quality products but for the success of an organization in general (Liker & Hoseus, 2008). The authors emphasize a four-stage process for building and keeping quality people: Attract, Develop, Engage, and Inspire. Several scholars have already defined the characteristics and components of innovative culture. For instance, Naranjo-Valencia et al. (2010) revealed in their research performed in Spanish companies that values, beliefs and assumptions coherent with adhocratic culture (Cameron & Quinn, 2011) are key drivers for developing new products or services. Brettel et al. (2015) investigated whether organizational culture plays a significant role in determining the level of innovativeness, proactiveness, and risk-taking in SMEs.

Illiashenko et al. (2018), based on the critical analysis of the literature, proposed a structure of the enterprise innovative culture that includes three components: organizational, motivational

and intellectual and creative. Losane (2013) summed up studies on the culture of innovation and identified five determinants: strategy, structure, values, behavior and communication and leadership. Similarly, Ulusoy et al. (2015) recognized the following determinants: strategy, structure, support mechanism, and behavior that encourages innovation and open communication. More precisely, Dombrowski et al. (2007) defined, based on past research, eight elements of organizational innovative culture: innovative mission and vision statements, democratic communication, safe spaces, flexibility, collaboration, boundary spanning, incentives, and leadership. Ceausu et al. (2017) agree with these determinants and see the key role of the leader in innovation management in the creation of a culture in which innovation and creativity are found in everyone's work. This process requires the top management commitment supported by the allocation of resources and incentives, which in turn contributes to better economic outcomes (Myšková & Hájek, 2016). Characteristics that, in the aggregate, capture the essence of innovative culture, stated Kalyani (2011) as openness, collaboration, trust, authenticity, proactive, autonomy, confrontation, and experimentation. Tidd & Bessant (2009) define a set of very similar characteristics as trust and openness, responding to challenges and commitment, support and space for new ideas, a specific approach to conflict and conflict resolution, risk-taking, and freedom to act. In addition to the above, Sitko-Lutek (2014) focuses on learning as a pro-innovation cultural value. According to Bendak et al. (2020), researchers have already defined four main cultural characteristics that have the potential to enhance innovation: creativity, freedom, teamwork and risk-taking. Furthermore, Shani & Divyapriya (2011) designed a framework of seven key dimensions (risk-taking, resources, knowledge, goals, rewards, tools and relationships), which leaders can use as a diagnostic tool to assess and strengthen the culture for innovation within and across organizations. O'Cass & Ngo (2007) measure innovative culture via a 12-item scale. Stock et al. (2013) measured innovative culture by asking R&D managers the degree to which their company's cultural artifacts, values and norms support innovation. We can find a similar approach to measurement in Chenhall et al. (2011) and Wei's (2013) studies, but with different content of innovative culture construct.

The table below summarizes the main results of comprehensive research studies related to the characteristics, features and elements of innovative culture.

Tab. 1 – Typical characteristics, features and elements of innovative culture. Source: own research

Research study	Research method	Characteristics, features and elements
O'Cass & Ngo (2007)	questionnaire survey: 12-item scale measured via a seven-point scale	cultural perspective, including encouraging creativity, being receptive to new ideas, decentralizing decision-making and encouraging open communication
Dom-browski et al. (2007)	Exploratory multiple case study research design	innovative mission and vision statements, demo-cratic, lateral communication, safe spaces, flexibility, boundary spanning, collaboration, incentive schemes, leadership

Tidd & Bessant, (2009)	synthesis of the results of scientific studies	shared vision, leadership and the will to innovate, appropriate structure, key individuals, effective team working, high-involvement innovation, creative climate, external focus
Shani & Divyapriya (2011)	a conceptual model based on existing theoretical and empirical evidence	risk-taking, people as the 'resource' of authority and autonomy to act on innovative ideas, knowledge sharing, inspirational goals and challenging teams, rewards for innovation, creative thinking, idea management, and relationships.
Hechanova (2014)	case study analysis	create model: communicate desired values, role modeling by leaders, evaluate and reinforce desired behaviors, align systems and resources, train for desired values, and engage employees in the culture-building efforts
Naranjo-Valencia & Calderon-Hernández (2018)	review of theoretical literature and results of empirical studies	freedom, risk-taking, commitment and trust, mental flexibility, confrontation, acceptance of diversity, curiosity, association and respect
Brettel et al. (2015)	questionnaire survey of 298 enterprises	external focus and emphasize change and development
Illiashenko (2018)	critical analysis of the literature	staff innovative abilities, organizational component, motivational component, intellectual and creative component
Davies & Buisine (2018)	an analysis of the literature	innovative leaders and managers, the presence of innovative teams, the presence of innovative individuals, an organizational context conducive to innovation, and multiple and easy links outside of the organization

Based on the extensive literature review, we see that there are more than 50 different characteristics that can create an innovative culture. This contributes to a very confused and fragmented view of the innovative culture construct. Moreover, the previous research does not sufficiently reveal the relationships between these characteristics, nor does it address how to translate innovation-friendly values into desirable managerial behavior. To contribute to the current state of knowledge in the research, we formulate four research questions:

RQ1: What are the important innovative culture attributes?

RQ2: How can these attributes be translated into specific behaviors of organizational members?

RQ3: What is the perception of the importance of individual attributes?

RQ4: What is the structure of an innovative culture?

3. RESEARCH METHODOLOGY AND QUESTIONNAIRE

In this article, the mix research approach is used. The main rationale for choosing mix approach is that using a combination of research approaches provides a better and more comprehensive

picture of the study phenomenon. (Queirós et al., 2017) The sequential exploratory mixed method design, according to Creswell et al. (2014), is chosen, where the first phase, the qualitative one, helps in the development of the quantitative phase. This design is used for developing and testing instruments and best suits the designed research questions.

Research and statistical methods

To begin, qualitative research is conducted to answer the first two research questions, RQ1 and RQ2. Interviewing was chosen as a qualitative method because it allows all depth and extensive understanding of the issues using their textual interpretation (Jamshed, 2014). The personal semi-structured interview was performed according to Galletta (2012). In the first phase, a pre-defined list of characteristics resulting from the literature review was discussed with managers regarding their importance to the corporate culture. In the second phase, the identified key characteristics of innovative culture were translated into specific behaviors of organizational members. After the transcription of interviews, the open, axial and selective coding techniques were used to analyze the data. Twelve key characteristics of innovative culture were identified and transformed into specific behaviors.

Secondly, quantitative research using a questionnaire survey to answer RQ3 and RQ4 was carried out. The questionnaire survey aimed to verify the importance of the identified key attributes of the innovative culture and examine the level of their use among the surveyed companies. To disclose differences in the perception of innovative culture claims between managers and employees of the company's null hypothesis for each attribute was tested.

H0: There is no difference between the evaluation of managers and employees.

The attributes of innovative culture are measured on a seven-point Likert scale (1 means strongly disagree and 7 means strongly agree). The Likert scale for measuring innovative culture has already been used effectively in prior research (O'Cass & Ngo, 2007; Chen et al., 2012). The results were evaluated using the Wilcoxon matched-pairs test. This test is a non-parametric alternative to the t-test for dependent (correlated) samples. The procedure assumes that the variables under consideration were measured on a scale that allows the rank ordering of observations based on each variable (i.e., ordinal scale) and that allows rank ordering of the differences between variables (this type of scale is sometimes referred to as an ordered metric scale). Thus, the required assumptions for this test are more stringent than those for the Sign test. However, if they are met, that is, if the magnitudes of differences (e.g., different ratings by the same individual) contain meaningful information, then this test is more powerful than the Sign test. For large-size samples (approx. great than 50 observations), the test statistics has an asymptotic Gaussian distribution. For great details, see Wilcoxon (1945) or Pacáková (2015).

In the next step, cluster analysis was used to establish the strong relationships between individual characteristics. Cluster analysis is the task of grouping a set of objects in such a way that objects in the same group (cluster) are more similar, in some sense, to each other than to those in other groups (clusters). There are many clustering algorithms. Two of them were used: hierarchical clustering and k-means clustering. Hierarchical clustering builds models based on distance connectivity, which can be visualized using a dendrogram. Based on the dendrogram, it was possible to determine the appropriate number of clusters. This information was then used

in k-means clustering, the most common method of so-called centroid-based clustering. For great details about cluster analysis, see, for example, Rencher & Christensen (2012). Finally, a framework for innovative culture was created based on these findings.

Research Sample

The target population for the study was large-size enterprises (more than 250 employees) that are considered innovative operating in the Czech Republic. In the Czech Republic, 47% of companies innovated their products, processes, marketing and organizational methods in 2018 (ČSÚ, 2020). From the international point of view, enterprises in the Czech Republic are still less innovative than the EU28 average. The ownership of a business and its size affect the intensity of innovation activities. Large companies with more than 250 employees innovate most intensively. The latest official information from the Czech Statistical Office states that 73.6% of enterprises in this size group innovated in 2016–2018. Regarding business ownership, foreign-controlled enterprises (58%) innovate more than domestic enterprises (42%). (ČSÚ, 2020) To summarize, there are 1,291 large enterprises in the Czech Republic, of which 951 are innovative. The sample of enterprises used for the research itself was randomly selected. 450 enterprises from a variety of industries were contacted by e-mail.

Firstly, the personal semi-structured interviewing with managers responsible for innovation and change management from large-size enterprises in the Czech Republic that agreed to participate in the study was used to collect primary data at the beginning of 2021. There were 20 managers from 20 different companies that we met for personal interviews. Afterward, there were 60 companies that agreed to participate and fulfill the questionnaire and were used for the survey. 27% of respondents are from the manufacturing industry, 23% from the financial sector, 16% chemical industry, 16% from the food industry, 11% from the automotive industry and 7% tourism industry. The response rate is 13,33%. In every company, one manager responsible for innovation and change management and one average employee were surveyed. From existing literature, we know that when top executives are surveyed, response rates are typically lower than when consumers or managers are surveyed. Also, these response rates are lower than those of non-working respondents or non-managerial employees. (Anseel, 2010) The most difficult aspect was to get compliance from the top manager, then we could search for an employee as the second participant from every company.

According to Dobni (2008), the key to innovation in organizations lies in the ability to define, instill, and reinforce innovation-supporting traits amongst employees. In particular, managers must send the necessary signals to facilitate a change in the way employees think and act, and employees must respond to these changes and take up the challenges. It is clear and consistent with the theory that innovative companies are those where employees perceive and share innovativeness as their value, same as the managers. Therefore, two respondents from companies participating in the survey were interviewed - the same questions were given to the manager and ordinary employee. 120 respondents who had knowledge of past and present organizational practices relating to innovation-related aspects in the organization fulfilled the questionnaire.

4. RESULTS AND DISCUSSION

Organizational culture is a crucial factor when increasing innovativeness in organizations. As stated by Terziovski (2008), too often neglected is not just knowledge needed, acquired and processed, but rather the right set of attitudes and values required for innovations to occur. The question remains what the significance of the proper set of attitudes and practices is to shape an innovative culture and therefore increase the competitiveness of an organization. The result of qualitative research (RQ1 and RQ2) identify the twelve most important attributes of innovative culture and their translation into specific behaviors. These twelve specific behaviors that need to be checked in every company to be able to diagnose corporate culture are listed in Table 2. To answer RQ3, these attributes were examined using a questionnaire survey to reveal the evidence and importance of their use in surveyed companies. The following table shows the attribute ratings of importance used according to the highest mean of managers as well as employees' opinions. The table also presents p-values as the results of the Wilcoxon matched pairs test.

Tab. 2 – Importance ratings for main attributes of innovative culture and results of Wilcoxon matched pairs test. Source: own research

Attribute		Managers		Employees		p-values
		Mean	Stand. dev.	Mean	Stand dev.	
X1	Our company values emphasize innovation and creativity.	5.400	1.440	5.100	1.559	0.061
X2	Change is perceived as an opportunity in our company.	5.500	1.308	5.017	1.722	0.010
X3	The company environment is characterized by flexibility and spontaneity, providing a framework within which diverse opinions and ideas flourish.	4.833	1.463	4.350	1.716	0.004
X4	We emphasize the search for consensus and employee participation in the decision-making process.	4.350	1.549	3.767	1.640	0.001
X5	There are open channels of communication and a free flow of information between departments.	5.433	1.430	5.267	1.339	0.237
X6	We emphasize risk acceptance, error tolerance and learning from them.	4.917	1.576	4.450	1.731	0.004
X7	We require teamwork between all departments.	5.717	1.439	5.483	1.479	0.150
X8	Managers and employees are encouraged to develop new ideas even if they fall outside their area of responsibility.	4.817	1.621	4.383	1.814	0.008
X9	We explain to the subordinates the reasons for our decisions.	5.000	1.540	4.400	1.729	0.001

X10	Managers and employees are appreciated for new ideas and innovative solutions.	4.867	1.692	4.517	1.836	0.049
X11	We allow employees to choose their own approach to work.	4.600	1.607	4.267	1.793	0.041
X12	Managerial decisions are based on a long-term philosophy, even at the expense of short-term financial goals.	4.917	1.510	4.600	1.607	0.021

The study provides insight into managerial behavior. Table 2 shows the mean importance ratings of the main attributes of innovative culture. The results indicate that, for managers, the top attribute of an innovative culture is teamwork between all departments. The following most important attributes for managers are: change which is perceived as an opportunity; open channels of communication and free flow of information; and lastly company values emphasizing innovation and creativity. These are also the top four attributes listed by employees. Those four attributes are highlighted with a dark grey color to increase clarity in Table 2.

Other attributes that are relatively well rated by respondents include explaining reasons for decisions to the subordinates, emphasizing risk acceptance, error tolerance and learning from them, and managerial decisions based on a long-term philosophy, even at the expense of short-term financial goals.

The rest of the attributes are secondary and lower-rated. The lowest mean rating is for the emphasis on the search for consensus and employee participation in the decision-making process. Some managers might be afraid of giving more responsibility to employees. Still, employees in innovative organizations should have a high level of autonomy, responsibility, accountability, and power - they are free to decide what to do, when to do it, and who to do it with. The second lowest-rated attribute is allowing employees to choose their approach to work. This finding depends a lot on the field. This is more complicated for some companies and easier for others.

The standard deviation shows that the most differentiated ratings from all attributes are for encouraging new ideas and innovative solutions, followed by other attributes related to employee involvement. This applies to both managers and employees. Table 2 also reveals that for all innovative culture attributes, the average rating given by managers is higher than that provided by employees. Successful implementation of innovative culture requires a thorough understanding of its specific attributes by not only managers but also ordinary employees. Therefore, we focused on whether differences in the perception of innovative culture claims between managers and employees of companies can be considered statistically significant. Thus, for each attribute, the null hypothesis was tested by Wilcoxon matched-pairs test.

H0: There is no difference between the evaluation of managers and employees.

12 statistical hypotheses were tested, one for every attribute of innovative culture. Table 2 shows p-values - the results for testing each hypothesis. At the significance level of 0.05, no statistically significant difference in the evaluation of managers and employees could be demonstrated for three attributes. The null hypothesis was not rejected (p-values were greater than the stated significance level) for the following attributes: our company values emphasize innovation and

creativity, there are open channels of communication and a free flow of information between departments, and we require teamwork between all departments. These three attributes are highlighted with dark grey in Table 2. This is positive information as it shows, among other things, that employees have the same awareness of the company's values as managers and both groups confirm the importance of innovation on the same level. At the same time, all three mentioned attributes are highly rated by all respondents and are one of the most important attributes of innovative culture among the surveyed companies. For all other attributes, the above-mentioned null hypothesis was rejected, i.e., there is a statistically significant difference in the evaluation of managers and employees.

Cluster analysis was used to demonstrate relationships between attributes and answer RQ4. First, hierarchical clustering represented by a dendrogram was used to prove what characteristics are related to each other. Therefore, it is recommended to apply them together to maximize their potential. The number of clusters was chosen based on the relatively high interpretability and sufficient detail of the results. The result in the form of four clusters is graphically shown in Figure 1.

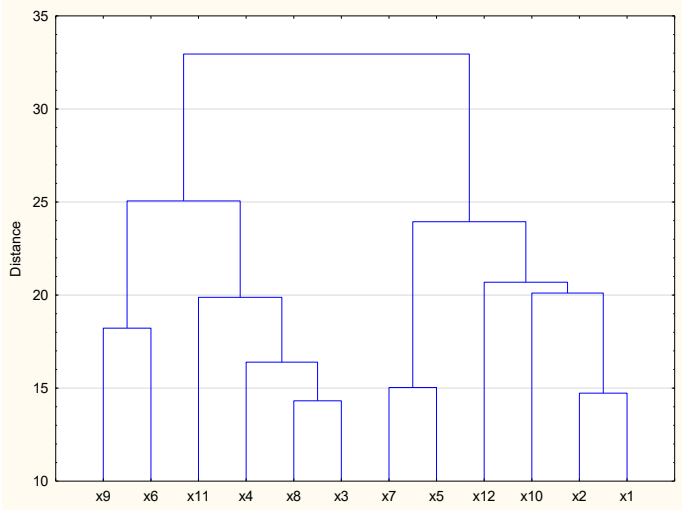

Fig. 1 – Dendrogram of hierarchical clustering (distance: Euclidean; linkage: Ward method). Source: own research

Next, k-means clustering was used as the second method of cluster analysis. Based on the results of the dendrogram, four clusters were applied to be used for k-means clustering. The results are shown in Table 3 and prove that these attributes are in the same clusters as in hierarchical clustering presented by the dendrogram, confirming the previous results.

Tab. 3 – Results of k-means clustering for 4 clusters. Source: own research

Attribute	X5	X7	X2	X1	X10	X12	X3	X4	X8	X11	X6	X9
Cluster	1	1	2	2	2	2	3	3	3	3	4	4

Statistical testing confirmed that all observed characteristics are perceived as highly significant by the enterprises. However, the result of the research confirms that not all monitored attributes are equally important and used and are not supported and applied by management at the same level. To clarify it, we divided attributes of innovative corporate culture into groups according to cluster analysis. The first cluster contains two attributes that are focused on communication and cooperation. The respondents (employees and managers of selected companies) ranked teamwork between all departments as the most used attribute of innovative culture. This is one of the essential characteristics that need to be applied first. Even Wilcoxon matched pairs test confirmed that managers and employees perceive the significance of this attribute equally. Teamwork between all departments needs to be accompanied by open communication channels and the free flow of information, which is the second attribute of this cluster. Any company should start with mentioned attributes as the most basic ones. The second cluster includes attributes with a very high level of importance related to innovation and approach to change as a core value of a company. These attributes are: change is perceived as an opportunity in company; and company values emphasizing innovation and creativity. The next cluster, based on two attributes, is related to employee participation. The company needs to highlight the search for consensus and employee participation in decision-making, which is the first attribute. This is linked to another attribute, which is about explaining to the subordinates the reasons for our decisions. The last cluster is based on the innovative climate of a company supporting engagement. This is the most hidden and advanced group of attributes. Managers and employees are encouraged to develop new ideas. This must be supported by emphasizing risk acceptance, error tolerance and learning from them. Employees are allowed to choose their approach to work. And the last attribute is a company environment characterized by flexibility and spontaneity, providing the framework.

Based on the research findings framework for innovative culture identification was proposed.

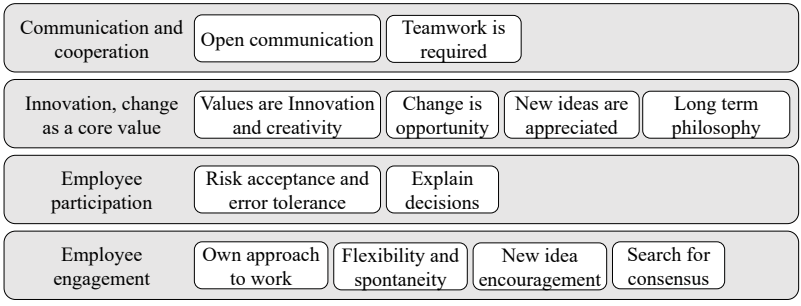

Fig. 2 – Framework for innovative culture identification. Source: own research

The proposed framework and methodology based on twelve defined attributes can be used to characterize and diagnose the level of company's effort to create or improve innovative culture.

The first defined cluster includes communication and team cooperation. Many research papers agree that those two types of attributes are key factors affecting the competitiveness of organizations. (Hutapea, 2021; Stacho et al., 2019; Realyvásquez et al., 2018; Jaruzelski &

Katzenbach, 2012) Also, the gained results are in line with previous studies (Roy et al., 2018) that see teamwork and cooperation as essential for innovations because these commonly involve changes to an array of processes and are rarely the result of the activity of one individual. The best way to succeed is to communicate and interact among various teams (Kleinsmann et al., 2010). Alves et al. (2007) findings indicate that cross-fertilization of ideas is maximized if there are open channels of communication between different departments in an organization and between persons who have different perspectives, skills, and training. Also, Kivimaki et al. (2000) found that, based on a sample of 493 employees, participative communication was the strongest predictor of innovation effectiveness. Schøtt & Jensen (2016) state that networking benefits both process and product innovation. Moreover, Chenhall et al. (2011) report that innovative organic culture includes items that cover more open communications, such as informal access to managers and an emphasis on consensus.

The second defined cluster is related to innovation and approach to change as a core value of a company. This is in line with Schein (2004), who states that study leaders must lead culture and changes. This includes even some radical methods such as challenging their own organization's working habits. According to him, these actions could change the organizational culture towards more innovative practices that most probably will increase the case company's competitiveness and innovativeness. This cluster and the following two clusters are closely related to teamwork quality rather than team composition. Companies need to create teams with key features that drive positive collaborations, such as communication, coordination, the balance of member contributions, mutual support, effort and cohesion (Pérez & Molina, 2017). Our result in the last cluster corresponds to our sample, where we have the largest representation in production, financial, and chemical fields. These companies must adhere and control the set rules to a greater extent than more creative fields. Developing new ideas, even if they fall outside their area of responsibility, is the third lowest-rated attribute. Even though it is often mentioned that to be successful, organizations must constantly create new ideas on how to improve their operations towards innovativeness to maintain competitiveness (Liu & Liang, 2015; Arundel et al., 2015; Nagano et al., 2014; Liu, 2013). It is clear from the results of the investigation itself that employee creativity, deep involvement in developing new ideas, own solutions, and spontaneity in making decisions are not perceived as crucial attributes that companies often apply. This is perhaps the typical reactive strategy by traditional companies in which the primary focus of managers is on management, not leadership. However, the greater the involvement of all employees, the better the results. These attributes cannot be easily applied, although exactly these characteristics are essential for organizations' innovation productivity. For this reason, human resource practices should consider the need for better involvement of employees in the innovation process and encourage employees in an active search for innovation and cooperation. Managers need to educate and lead employees to develop innovative culture and to encourage people to be more involved in the decision-making process of the organization, as these are, according to research itself, areas of little attention, despite being the key characteristics of a successful and competitive business culture nowadays. (Dombrowski et al., 2007; Tidd & Bessant, 2009) These less-used attributes are challenging to implement. They might be called attributes of a higher level, which a company can reach after fulfilling attributes from lower levels - the less demanding ones.

5. CONCLUSION

This paper argues that the origin of innovativeness that supports competitiveness lies in the organizational culture attributes and managers' abilities to manage culture and people. The aim of the exploratory mix research construct was to contribute to new knowledge of creating and maintaining innovative culture by developing a framework of innovative culture characteristics emphasizing their significance and interconnection. The created framework can be used to evaluate a company´s corporate culture. First interviews with twenty managers of innovative companies were conducted to choose twelve innovative corporate culture characteristics. Those characteristics were defined and transformed into specific behaviors of organizations. The subsequent survey among sixty managers and sixty employees from participating companies focused on the use of defined attributes. It confirmed the correctness and importance of previously defined key behaviors of innovative organizational culture. The cluster analysis identified a correlation between the individual characteristics and provided the latest information needed to build the framework. The contributions of the article are providing a clearer view of the most important characteristics of innovative culture, clarification of the relationships between individual attributes and recommendations as to which attributes should be put into attention and implemented with a group of other attributes to maximally support their potential. The use of defined twelve specific behaviors is recommended for every company to find out the necessary information about each element of innovative corporate culture and to be able to get the information needed for potential improvement of culture. The potential to apply all twelve attributes at a high level depends on the industry the company is operating in. As can be seen from the research, some industries' rules are not easily allowing risk acceptance, error tolerance, or flexibility and spontaneity. The potential limitation of the article is that this research is generic and not sector-specific, as well as the fact that individual respondents were used in the study. Future research needs to focus on specific industries individually and should strive for multiple informants. The first could be the manufacturing industry, as it is the industry with the largest number of innovative enterprises. (ČSÚ, 2020) The most innovative industries would get the most inspiring results.

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