Chapter 10

Perceiving Diversity – An Explorative Approach in a Complex Research Organization

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Abstract

Diversity management is seen as a decisive factor for ensuring the development of socially responsible innovations (Beacham and Shambaugh, 2011; Sonntag, 2014; López, 2015; Uebernickel et al., 2015). However, many diversity management approaches fail due to a one-sided consideration of diversity (Thomas and Ely, 2019) and a lacking linkage between the prevailing organizational culture and the perception of diversity in the respective organization. Reflecting the importance of diverse perspectives, research institutions have a special responsibility to actively deal with diversity, as they are publicly funded institutions that drive socially relevant development and educate future generations of developers, leaders and decision-makers. Nevertheless, only a few studies have so far dealt with the influence of the special framework conditions of the science system on diversity management. Focusing on the interdependency of the organizational culture and diversity management especially in a university research environment, this chapter aims in a first step to provide a theoretical perspective on the framework conditions of a complex research organization in Germany in order to understand the system-specific factors influencing diversity management. In a second step, an exploratory cluster analysis is presented, investigating the perception of diversity and possible influencing factors moderating this perception in a scientific organization. Combining both steps, the results show specific mechanisms and structures of the university research environment that have an impact on diversity management and rigidify structural

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barriers preventing an increase of diversity. The quantitative study also points out that the management level takes on a special role model function in the scientific system and thus has an influence on the perception of diversity. Consequently, when developing diversity management approaches in research organizations, it is necessary to consider the top-down direction of action, the special nature of organizational structures in the university research environment as well as the special role of the professorial level as role model for the scientific staff.

Keywords: Diversity management; organizational culture; change management; psychological concepts; perception; leadership styles

1. Introduction

The global society is confronted with different challenges. Examples include so-called megatrends such as Gender Shift, Silver Society, New Work and Neo Ecology (Horx et al., 2021), climate change and the resulting sustainability debate. Looking at the 17 sustainable development goals (SDGs) (United Nations, 2018) adopted in 2015 by all United Nations member states, it becomes clear that the reflection of diverse needs plays an essential role in being able to meet the challenges mentioned. In order to ensure the implementation of diverse perspectives on the creation of solutions, it is necessary to establish diverse working groups at the most varied levels of impact. A prerequisite is therefore diversity management, which on the one hand increases diversity in organizations and on the other hand supports the active implementation of different perspectives in the work process by creating an environment in which diversity is lived and regarded as a valuable component of successful processes.

1.1. So Important and Yet So Ineffective – Why Diversity Management[1] Efforts Fail

Despite the high importance of diversity in for example decision-making and development processes, Thomas and Ely stated in 1996 that diversity management efforts tend to fail (Thomas and Ely, 2019) and renewed this assessment in 2020 when stating that "[t]he problem is that nearly 25 years later, organi[s]ations have largely failed to adopt a learning orientation toward diversity and

[1]Diversity management is, compared to the term diversity, not a uniformly defined concept. In the framework of this paper, diversity management is in alignment with the OENORM S 2501: 2008-01-01 2008 understood as a strategically oriented management approach, intending the targeted perception and usage of human diversity as well as relevant organizational environments and/or stakeholders. By creating structural and social conditions that allow all employees to develop and unfold individual capabilities, diversity management aims to motivate employees to increase the individual performance and thus the organizational success (OENORM S 2501:2008-01-01 2008).

are no closer to reaping its benefits" (Thomas and Ely, 2020: n.p.) and affirm: "[…] Increasing the numbers of traditionally underrepresented people in your workforce does not automatically produce benefits" (Thomas and Ely, 2020: n.p.). Along with Thomas and Ely (2019, 2020), also Dobbin and Kalev (2016) as well as Vassilopoulou (2017) conclude that diversity efforts have failed in many cases, even in a member organization of the Diversity Charta in Germany, a corporate initiative that promotes diversity in companies and institutions (Vassilopoulou, 2017). Summarizing the conducted analyzes, the main reasons for this development are seen in diversity management strategies that strive for a simple identity-group representation, neglect intersectionality, assume that "[…] the main virtue identity groups have to offer is a knowledge of their own people" (Thomas and Ely, 2019: n.p.) and "[…] miss […] out to tackle deeper-level structures of inequality and discrimination" (Vassilopoulou, 2017: 303). Following from these reasons, the high efforts in the context of diversity management also seem to fail due to a lack of analysis of organization-specific conditions and structural barriers. The organization-specific framework conditions include hierarchies and powers of direction, external influencing factors, but also the organizational culture as a common understanding of values and a possible source for discrimination patterns. In conclusion, especially a profound linkage of diversity management with the respective organizational culture seems to prevent a sustainable implementation of diverse perspectives into existing organizational structures (Leicht-Scholten, 2011; Steuer-Dankert, 2020; Thomas and Ely, 2020). This becomes even clearer when regarding Schein's (1990, 2004) understanding of what can be summarized under the term *organizational culture*.

1.2. The Triangle of Diversity Management, Discrimination and Organizational Culture

Schein describes

> [c]ulture […] as (a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems. (Schein, 1990: 111)

Following this definition, organizational culture not only influences working routines and processes, but also shapes human interactions, the perception of individuals, and thus has a significant influence on the expression of discriminatory behavior. In accordance with Schein (1990), organizational culture is designed by a (dominant) group, which first results in the fact that it is human-made, but also shows how diversity is reflected and connoted at the respective organization. At the same time, this not only underlines the necessity of linking diversity and

organizational culture, but also points to the dangers of discriminatory structures in the absence of a reflection on diversity.

The connection between organizational culture and diversity becomes even clearer if reflected in a context with social cognitive psychology theorems. Following Fiske (2009), *social cognition* describes a process of mental steps that are conducted when people think about other people. In this context, the human mind is understood as a system that creates an individual's reality (Bandura, 1999, 2001). This reality is influenced by three types of environmental structures summarized under the *Social Cognitive Theory* (Bandura, 1999). The Social Cognitive Theory distinguishes (i) the imposed environment, (ii) the selected environment, and (iii) the constructed environment, and points out that the human environment "[…] is not a monolithic entity" (Bandura, 1999: 6). Considered from another perspective, this means that not only concrete experiences, but also the organizational culture, as a pattern of values and norms, can have an influence on the perception of individuals and, consequently, can have an influence on the individual reality. To cope with this complex reality, people use cognitive categories to understand and comprehend their environment (Rosken, 2016). Described as *prototypes* (Fiske and Taylor, 1991), *stereotypes* (Glick et al., 1988) or *schemata* (Kalin and Hodgins, 1984), these systems aim for a swift classification of the unknown and action strategies that can be derived from it. While *schemata* describe an overarching concept that assigns meanings to associations of attributes resulting from a certain stimulus (Fiske and Taylor, 1991), *prototypes* represent specific cognitive structures expressed in common but also significant categories (Rosken, 2016). *Stereotypes* describe generalized knowledge about a certain group or phenomenon and can thus be a basis for judgment (Rosken, 2016).

In summary, the concepts described serve as instruments to reduce complexity and to process information. As cognitive processes they do not automatically result in discriminatory behavior. However, if the associated stereotypes are not subject to critical self-reflection, the categorization of people based on these cognitive concepts can lead to discriminatory behavior patterns. In this context, a decisive factor is to what extent the individual reflection of stereotypes and prejudices is part of the subjective capacity for reflecting these underlying assumptions, but also of the organizational culture that motivates this self-reflection. In addition to intrapersonal thought processes and reflection structures, interpersonal processes play an important role in the perception of diversity and the existence of discriminatory structures. For this reason, interpersonal processes will also be briefly discussed below.

While cognitive concepts like schemata, stereotypes and prototypes consider the intrapersonal processing of environmental complexity, Tajfel (1974) as well as Tajfel et al. (1981) focus on social psychological factors in intergroup behavior. In this context, *social categorization* is understood as "[…] a process of bringing together social objects or events in groups which are equivalent with regard to an individual's actions, intentions and system of beliefs" (Tajfel, 1981: 254). Comparable to the interpersonal process mentioned above, intrapersonal processes like social categorization describe socially derived value differentials that result from cognitive mechanisms of categorization. But considered from an interpersonal

perspective, social categorization leads to a classification of humans into two groups – the individual's own group (ingroup) and the outgroup (Tajfel, 1981). Study results show that people tend to favor groups to which they feel they belong, even if the characteristics leading to membership can be considered irrelevant and a direct subjective advantage is not apparent (Tajfel et al., 1971). In this context, Van Knippenberg (2000) summarizes that

> [i]dentification leads individuals to perceive themselves in terms of the characteristics they share with other members of their ingroups – their shared social identity – rather than in terms of the idiosyncratic characteristics that differentiate them from other individuals – their personal identity […]. (Van Knippenberg, 2000: 358)

Following this argumentation, belonging to a group automatically results in differentiation from other groups and can therefore be a cause of discrimination. Tajfel et al. (1971) stated

> […] that discriminatory intergroup behaviour cannot be fully understood if it is considered solely in terms of an "objective" conflict of interests or in terms of deep-seated motives that it may serve. (p. 176)

These motives can also be the counterpart of a prevailing organizational culture, which in turn can lead to a demarcation through belonging or not belonging. Summarizing the effects of interpersonal and intrapersonal processes, the necessity arises to develop a diversity management approach which is adjusted to the target organization and takes the prevailing organizational culture into account. This results in the development of organization-specific measures that reflect the prevailing dominant habitus and perception of diversity in the target organization.

1.3. Diversity Management in Research Organizations

Research organizations have a special significance regarding the reflection of discrimination and diversity on different levels. Public educational institutions such as universities represent places of education and further development and therefore require a special confrontation with discriminatory structures and the establishment of an organization-specific diversity management (Steuer-Dankert, 2020). In Germany, financed by the public authorities (Hochschulrektorenkonferenz, n.d.), scientific organizations are specifically obliged to conduct socially responsible research that reflects the needs of a diverse society. This is also proclaimed by central science organizations such as the American National Science Foundation (NSF) or the Deutsche Forschungsgemeinschaft (DFG) (German Research Foundation), which emphasizes the importance of diversity in education and science (National Science Foundation, n.d., 2011, 2019; Deutsche Forschungsgemeinschaft, 2017, 2018a, 2018b, 2020). In doing so, the DFG (2017) states that to ensure long-term engagement with all social areas, an adequate

representation of all these different areas in science is required. Consequently, the need for research groups that are characterized by heterogeneity is seen and promoted (DFG, 2017). This perspective is also expressed by the European Union's (EU) framework Responsible Research and Innovation (RRI) that "[…] anticipates and assesses potential implications and societal expectations with regard to research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation" (European Commission, n.d.).

Against the backdrop of the expressed need for implementing diversity as a topic in science, but also into personnel structures in research organizations, the question arises as to how this claim should be realized and to what extent it has been realized so far. Furthermore, the analysis of diversity management efforts (Section 1.1), but also the analysis of the interdependency of diversity management, discrimination and organizational culture as well as the derived need for making the organizational culture a central part of diversity management strategies (Chapter 1.2) reveal a focus on private sector organizations (Steuer-Dankert and Leicht-Scholten, 2019). To be able to develop measures that are adapted to the framework conditions of organizations in the public educational sector (Steuer et al., 2017a) and the absence of corresponding research and approaches in the appropriate context, this chapter presents an analysis that precisely addresses this research gap.

Considering the mutual dependencies between diversity management, organizational structure and discrimination described above (Section 1.2) as well as the described need for investigating diversity management in public educational institutions (Section 1.3), this paper first discusses the special conditions of university-related research organizations (Section 2), bringing together the system-theoretical approaches of Klaffke (2009), Cox (2001) as well as Aretz and Hansen (2002). In doing so, this article closes a research gap to implement a targeted and sustainable diversity management that considers the organization-external and -internal influencing factors on organizational culture. Based on these insights, we will then present an explorative study applying a quantitative survey in a Cluster of Excellence (CoE), a large research institution in Germany, that relates the perception of diversity to the importance of diversity in the respective research organization (Section 3). In doing so, a blueprint will be presented that aims to help diversity management initiatives to reflect organization-external and -internal influencing factors of public educational organizations in Germany and to reflect the key persons in these systems. Consequently, the presented chapter aims to support the development of sustainable diversity management strategies. In addition, combined with the model of organization-external and -internal framework conditions of the target organization, political, management, but also theoretical implications are derived and discussed (Section 4).

2. Analyzing Diversity in Organizations – A System-Theoretical Approach

Aretz and Hansen (2003a) emphasize that a deep understanding of the factors influencing an organization is needed to develop and implement a targeted

diversity management. In doing so, they refer to a system-theoretical approach that understands organizations as social systems that are characterized by operational openness to the environment. From this openness, the influence of organizational processes and structures can be derived, which in turn can have an influence on management but also on the perception of diversity. Also, Klaffke (2009) makes this connection in stating that organizations must consider the impact of a diversified workforce against the background of the organization-specific strategic objectives, which in turn are subject to organizational influencing factors. This results in the need for organization-specific diversity management strategies that mirror the organization's framework conditions. But how can the influencing factors be captured in a structured way?

2.1. Prevailing System-Theoretic Diversity Models

Different models try to provide a holistic perspective on organizational levels and influencing factors on diversity management in order to ensure a basis for structured analyzes of these levels. Klaffke (2009) suggests a model that implements the reflection of *skills, structures* and *strategies*, standing in an equivalent relation to the culture of diversity. In his *3-S-Diversity Model*, the element *skills* represents a diversity-appreciative attitude with a corresponding mindset and supportive measures. Following Schein's (1990) understanding of an organizational culture, the mindset refers to the culture lived in the organization and the associated perception of diversity. This is also accompanied by an assignment of leadership competences, supporting the organization-wide appreciation of individuality. With *structure*, Klaffke (2009) describes the targeted adjustment of instruments and processes. For example, hiring processes and recruitment strategies need to be coordinated to an organization-wide diversity management strategy (Kreitz, 2007) and manifested by defined target values and measurable goals. *Strategy* stands for concepts that reflect the mutual compatibility of the organization's need for diversity and the individual's need to be included in a diverse organization (Klaffke, 2009). With the three dimensions mentioned above, the *3-S-Diversity Model* initially provides a conceptual framework for implementing diversity management in an organization in a strategy-oriented manner, indicating the necessity to reflect different pressure points of an organization while developing and implementing a diversity management strategy.

Aretz and Hansen (2002) propose a comparable approach with their system-theoretical perspective. Their approach first points to the individuality of organizational framework conditions. In contrast to Klaffke (2009), they explicitly differentiate between factors internal to the organization and factors external to the organization. From their perspective, a complex external organizational environment is automatically reflected in organization-internal complexity. This is mirrored in a functional differentiation of subsystems that are derived from the external environment. Consequently, these systems can be distinguished between those which provide intangible resources and those which supply tangible ones. In their model, this results in four types of sub-systems which are further described in the following (Aretz and Hansen, 2002, 2003a) (Fig. 16).

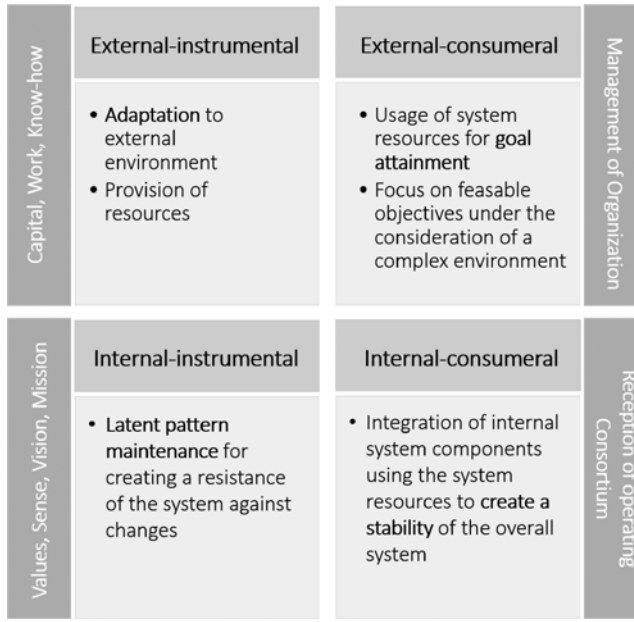

Fig. 16. Entrepreneurial Frame: Sub-systems and Their Functional Tasks (After Aretz and Hansen, 2003a).

Aretz and Hansen (2002, 2003a) distinguish external-instrumental, external-consumeral, internal-instrumental, and internal-consumeral systems. In the context of this differentiation, *external-instrumental* subsystems deal with the provision of resources that enable the establishment of diversity. For example, it requires time and knowledge on the employee level to actively deal with the changes and new requirements which are coupled with a diverse workforce. Concrete approaches could include employee trainings such as anti-bias trainings that enhance knowledge and internal competencies as well as an adapted time budgeting for projects. *External-consumeral* subsystems deal with an active and effective usage of resources to fulfill intended goals and thus focus on the management level. In this context, for example, the top-down representation of corporate values and the active integration into the organizational culture are crucial factors for the implementation of diversity management. Consequently, measures must be linked to corporate strategies and targets since diversity management is mutually influenced by factors like conflicts and challenges in human resource, market access, creativity, costs and problem-solving approaches. The *internal-instrumental subsystems* stand for the linkage of diversity management with the corporate visions and values and, as such, with a clear definition of diversity and diversity management as part of a corporate identity. This is accompanied by enabling teamwork on the employee level in diverse teams through corporate structures that reflect the challenges of such cooperation. *Internal-consumeral subsystems* describe the need for a holistic integration of diversity management into an organization and

the context-sensitive consideration of processes, corporate strategies and organizational structures. Consequently, the internal-consumeral subsystems require diversity management to be an objectively justified strategy at the management level connected with the stakeholders' and shareholders' perspectives (Aretz and Hansen, 2003a).

In contrast to Aretz and Hansen's (2003a) organization-focused approach, Cox (2001) takes a more human-centered perspective for the development and implementation of a diversity management strategy. From his point of view, a successful diversity management and an accompanying change require the involvement of five central elements. In his model, he focuses on *leadership, research and measurement, education, alignment of management and follow-up processes* (Cox, 2001).

Starting with *leadership*, Cox (2001) indicates that the management level is responsible for introducing change by exemplifying corporate values and aims. In doing so, Cox (2001) proclaims a top-down approach when implementing diversity management. With *research and measurement*, Cox (2001) points to the necessity of data collection to capture the quantitative structure of an organization and to analyze if and which diversity is statistically prevailing. Under *alignment of management structures and processes*, concepts of human resource management are summarized (Cox, 2001). In doing so, Cox (2001) points out that those processes must be adapted to the aims of a diversity management strategy in order to achieve sustainable effects. This is comparable to the external-consumeral subsystem of Artez and Hansen's (2003b) model and what Klaffke (2009) summarizes in his 3-*S*-Model under *structure*. Follow-up processes aim for a continuous improvement and the evaluation and further development of already implemented measures and strategies (Cox, 2001). In this context, instruments like the Diversity Scorecard or organization-specific key figures are appropriate to evaluate the success of the strategy (Hermann-Pillath, 2009).

The models described are all characterized by a structured and systemic perspective on organizations regarding the integration of diversity management strategies. The difference between the approaches can be seen in the focus on the different layers of an organization that need to be considered and actively involved into the development and implementation of a diversity management strategy. Combining those different perspectives thus results in a complete picture of organizational reality.

Due to the absence of approaches that specifically reflect the framework conditions of publicly funded research institutions, a new perspective on and active implementation of the identified levels is needed. Moreover, in targeting those different layers, it becomes evident that a structured change management process is needed to accompany the development and implementation of diversity management. Consequently, there is a need for a new approach that both combines the different perspectives represented by the three models and understands the change management process as an approach that contributes to successful diversity management (for more information, see Steuer-Dankert, 2020).

Following, a system-theoretic approach is presented summarizing the perspectives of Klaffke (2009), Aretz and Hansen (2003b) as well as Cox (2001) and reflecting the special framework conditions of the German science system.

A so-called CoE is used as an example of a science organization to illustrate the special features of the science system and thus the specific factors influencing diversity management.

2.2. A System-theoretic Diversity Model for an Interdisciplinary Research Organization – The CoE

CoEs are conglomerates of different specialists and researchers from various faculties and research institutions (DFG, 2014). As big research organizations, CoEs are characterized as competitive research and educational institutions (DFG, 2014). Established in the scope of the Excellence Initiative of the German federal and state governments, the German Research Foundation (DFG) and the German Council of Science and Humanities, they represent a core element of the German research landscape (DFG, 2014, 2016). As associated organizations and research networks at German universities, CoEs are characterized by a highly complex structure which results from authorities on the level of the research institution, faculties, but also CoE management. This complexity is also mirrored in the high autonomy of the university chairs and the resulting institution-specific processes (e.g., recruitment processes but also innovation processes and HR management), hierarchy structures as well as organizational culture, subject habitus, values and leadership styles. In this context, the freedom of science and the resulting independency on the institutional level represent a fundamental structural influence on the development and implementation of diversity management strategies in a CoE. This autonomy is also reflected in the fact that employment contracts are usually concluded with the respective superordinate organization, in this case a university or research organization like the Fraunhofer-Gesellschaft. Considering the application processes, job interviews and decisions are decentralized and carried out in the respective research institution (Steuer et al., 2017b; Steuer-Dankert and Leicht-Scholten, 2019).

Analyzing the organizational structure of the target organization, further indicators for a given complexity can be determined. The target organization is structured in so-called research areas. Also called workstreams, employees coming from different research institutions work in sub-projects under a certain research topic. Regarding the authorities, the projects are supervised by a management in the respective research area. This management is subordinate to the CoE management level as well as the workstream lead. Comparable to a matrix-organization, this means that research associates working in those workstreams are subordinate to different authorities, as in addition to the already mentioned hierarchy levels, the professorial level in the respective research institutes is also entitled to issue instructions. This results in the fact that employees are confronted with different management structures and leadership styles, which are then reflected, for example, in decision-making processes within the framework of the interdisciplinary projects.

In conclusion, Clusters of Excellence can be understood as big research projects, giving an organizational frame by having a management board and associated committees such as Industrial and Scientific Advisory Boards (see Fig. 18).

The workstreams are made up of people from different research institutions whose research institutes represent the daily working environment. As a superordinate organization, the CoE therefore defines the framework conditions for cooperation through elements such as project structures, workstream lead and key performance indicators, but the direct authority lies with the management of the research institutes.

Against the background of the development of a diversity management approach, it is particularly important to take into account this clash of different structures and management styles when considering the organizational culture in accordance with Schein (1990). The initial analysis of the framework conditions already shows that, due to the complexity of the CoE structure, different organizational cultures can prevail, which can influence the diversity management strategy of the CoE as an overarching organization. In accordance with this, the challenge is to identify the key determining factors for cultural change in the sense of diversity management. For this reason, it is not only necessary to analyze the conditions in the target organization, but also to analyze the factors influencing the organizational culture in the respective research institutes as they represent the direct working environment.

Due to the resulting complexity that influences the implementation of a diversity management strategy in a CoE, a detailed investigation of external influencing factors in the target organization is necessary to link the strategy to existing structures (Steuer et al., 2017a). Considered from an organization-external perspective, CoE-specific patterns and frameworks can be identified. Embedded into the public educational sector, Clusters of Excellence are influenced by university-specific structures as well as obligations. In Germany, teaching responsibilities and research are obligatory task fields of the research groups that are located at a university and thus the CoEs that consist of members of these research groups. In concrete terms, this means that researchers fulfill educational tasks, train junior managers and fulfill duties for their research assignments. Regarding system-external aspects, scientific cultures, but also labor law frameworks must be considered. The majority of the CoE staff are research associates striving for a doctorate degree and thus hired under the so called Wissenschaftszeitvertragsgesetz (WissZeitVG), an academic fixed-term employment regulation. The WissZeitVG dictates that working in a scientific institution must be considered as an individual scientific qualification phase; therefore, the law modifies the possibility of fixed terms for employment. As a result, research associates can be employed at scientific institutions for a maximum of six years [§ 2 Abs. I Wissenschaftszeitvertragsgesetz (WissZeitVG)]. This, on the one hand, leads to a workforce fluctuation and, on the other hand, to an allocation of resources. In sum, the influencing factors on scientific organizations show (Fig. 17) that these organizations underly different framework conditions than enterprises in private sector. Fig. 17 illustrates the adaption of Aretz and Hansen's (2003a) model to the specific influencing factors of a public scientific organization in the educational sector (see Fig. 17).

Consequently, it is questionable to what extent established diversity management strategies are applicable for organizations with the described framework

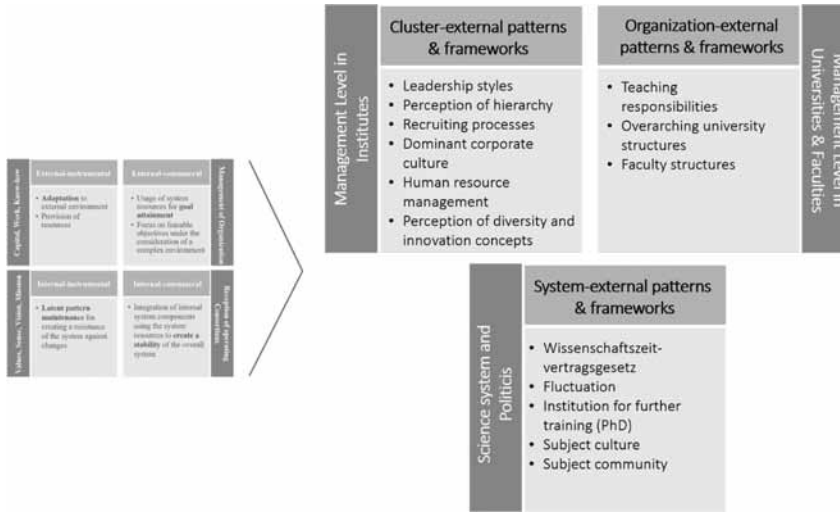

Fig. 17. Influencing Factors on a Research Organization (Steuer et al., 2017a).

conditions. This results in the need for a system-theoretical analysis of such research organizations for being able to identify and develop target-oriented concepts and measures (Steuer-Dankert, 2020).

To realize a first application of the derived model, a study is presented that investigates the management level in institutes and the CoE as an organization from an employee perspective. In doing so, the prevailing mindset on diversity and the primary leaderships styles are investigated and combined in an exploratory analysis to derive the organizational culture of the CoE and measures targeted to the organization and its environment.

3. Perceiving Diversity at a CoE at a Technical University in Germany

Coming from the system-theoretical perspective (Section 2), the analysis of prevailing mindsets and perceptions of diversity seems to be a crucial factor for the development of a diversity management strategy that reflects the organization-specific culture and circumstances and thus strives to have a long-term impact. This is supported by Ellemers and Rink (2016), concluding that the recognition and explicit positive appreciation of diversity in an organization is a key factor for success, as it

> […] is an important source of work motivation and belongingness for minority group members […]. Thus, it is not the numerical representation of different groups of workers, but the social acceptance of different people with different perspectives that is decisive […]. (Ellemers and Rink, 2016: 51)

A recent theoretical analysis suggests that the key to benefiting from diversity lies in the team members' diversity mindsets, which in turn must be reflected in a context with the organizational culture (Section 1.2). But what can be understood under the term *diversity mindset*? Following van Knippenberg et al. (2013), diversity mindset refers to employees' mental representation of diversity which is reflected on how they engage and interact with a heterogeneous team. Consequently, believing in a positive value of diversity has a measurable impact on the attitudes toward minorities and (van Dick et al., 2008; van Knippenberg et al., 2007) thus can influence the extent to which the benefits of diversity are harnessed for the organization. This effect, resulting from the diversity mindset can be explained by the related concept of *diversity beliefs*. Van Knippenberg et al. (2007) define diversity beliefs as "[…] a moderator of the relationship between work group diversity and individuals' identification with the work group […]" (van Knippenberg et al., 2007: 2), which "[…] causally influence discriminatory behavio[u]ral tendencies" (Kauff and Wagner, 2012: 1). Extrapolated to the social cognitive theories (Chapter 1.2), van Dick et al. (2008) explain this perceptual process of social categorization, according to the *Social Categorization Perspective* (van Knippenberg and Schippers, 2007), as "[…] group members' cognitive differentiation between themselves and other members due to perceived differences on a certain attribute (such as ethnic background, age, gender, functional background, etc.)" (van Dick et al., 2008: 1465), which takes up the interpersonal perspective (see Chapter 1.2). From their point of view, those

> [d]iversity beliefs are of particular interest, because they may be associated with positive responses rather than the negative effect of social categorisation processes when workgroup diversity is subjectively salient […]. (van Dick et al., 2008: 1465)

Considering the impact of organizational framework conditions, the organizational culture seems to have an impact on employees' diversity beliefs, too. In particular, attitudes and values exhibited by the management level seem to lead to imitation of the same behaviors on employee level of all hierarchy levels (Marshall and McLean, 1985).

To develop a concept that reflects the different perspectives on diversity, the diverse needs of employees and thus enables a broad acceptance of diversity management strategies, it is necessary to realize a participative approach that involves all employees of an organization in the development process. In doing so, it is particularly important to examine the variety of mindsets toward diversity on the different employee levels and, in a further step, to reflect on them in the context of the prevailing organizational culture. Based on the assumption that a diversity management strategy is implemented in already existing structures, Aretz and Hansen (2002, 2003a, 2003b) recommend a system-theoretical approach that follows the theory of general systems of action as an analytical framework for gathering a more differentiated perspective on prevailing diversity dimensions (see Chapter 2). Consequently, managing diversity implies a continuous process of reflection, which allows for scrutiny of hegemonic (Bates, 1975; Clayton, 2006)

constructions and aims to counteract the processes that constantly recreate those structures (Aretz and Hansen, 2003a). In this connection, *hegemony* is defined as a social reality that affects how perceptions, thinking and evaluations of individuals are shaped by so-called social collective standards (Aretz and Hansen, 2003a). These standards result from social interaction contexts, which lead to an institutionalization of denotations (e.g., stereotypes) and thus to an action effectiveness in society (Aretz and Hansen, 2003a). Consequently, the subjective and individual perception seems to be more significant than factual existing diversity. This is supported by Sepehri and Wagner (2000) stating that factual existing diversity seems to be not required when implementing a diversity management strategy. As organizations can be considered as micro-societies in which own definitions and reference frameworks as well as norms and values are defined that shape the organizational culture, it requires to question whether and how diversity is socially constructed and defined in the respective target organization (e.g., as a strategic success factor, as part of leadership) (Aretz and Hansen, 2003a) and perceived as a management approach.

Against the background of developing a diversity management approach for a CoE, the perception of diversity and the self-reflection in the social system seem to be crucial factors for successfully implementing diversity management in an organization. Thereby, it can be assumed that there is a range of different perceptions of diversity, depending on the individual experiences and backgrounds of the people working together in an organization. Taking the insights and study results discussed into account, in the following an explorative study is presented investigating prevailing mindsets and attitudes toward diversity in a CoE, a large research organization in Germany. The overarching question of the explorative analysis was how diversity is perceived by the employees in order to be able to derive the diversity mindset, to draw conclusions about the organizational culture and to develop an organization-specific diversity management strategy. This approach is expected to lead to a more targeted management of diversity and to achieve a higher acceptance of corresponding approaches. In the framework of the research concept, the management as well as the employee level are investigated separately. This section presents the results of the quantitative research approach applied on the employee level.

3.1. Data

The study was conducted at a CoE in Germany. Defined as large and competitive research organizations, CoEs are characterized by a strong focus on central scientific issues and a high level of interdisciplinary collaboration (Deutsche Forschungsgemeinschaft, 2019). The object of investigation had its focus on a paradigm shift in production technology and a holistic perspective on production theory (RWTH Aachen University 2011). This was accompanied by a strong engineering orientation of the research organization.

Reflecting on the influencing factors of a research organization described in Chapter 2.1, the organizational structure of the CoE is characterized by an arrangement in a central management board, but with strong decentral structures.

At the time the survey was undertaken, the target organization had 381 members. Fig. 18 illustrates the organizational structure with the hierarchical levels. Four research areas, the so-called Integrative Cluster Domains (ICDs), represent the Aachen House of Integrative Production. A total of three cross-sectional areas affects, with cutting edge topics, all four core research areas and function as intersectional research projects.

Five different hierarchical levels can be distinguished as follows in the research object: The (1) research associates, (2) project managers, (3) department managers and senior engineers, (4) CoE management/executive board and (5) professorial level. The first level of hierarchy is represented by the research associates, the target group of the presented study. Focusing on this group, the research associates are characterized by originating from different research institutes working in interdisciplinary groups at a research project that is located at the CoE. Consequently, research associates are assigned to different projects in which they are operationally active.

The employee level of research assistants represents the biggest employee group at the target organization. Analyzing the basic population of the target group, a total of 149 persons were identified. The survey was distributed via e-mail. The response rate was 46.31%. The demographic data of participants are characterized by the demographic situation at the target organization. A share of 8.7% identified themselves as female and 91.3% as male. The average age was 32.6 years (min. of 26, max. of 64 years). Regarding the cultural background, 13.24% stated a non-European non-German-speaking background, 1.47% a European non-German-speaking background and 85.29% a German speaking background. In terms of the specialist background, 52 participants indicated an affiliation with

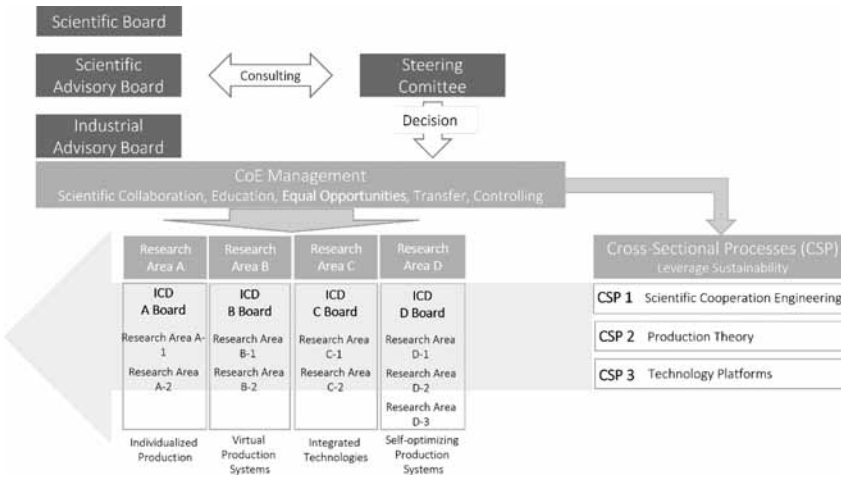

Fig. 18. Organizational Structure of the Second Funding Phase (In Accordance with RWTH Aachen University, 2011; Steuer-Dankert and Leicht-Scholten, 2019).

the engineering sciences, 13 persons with the natural sciences, mathematics and informatics, 3 persons with the humanities, 2 persons with the economic sciences and one person with the social sciences. One person mentioned an affiliation with others, multiple answers were possible. Regarding the educational background, 76.81% of the surveyed completed their studies at the RWTH Aachen University and 23.19% at other universities.

The research organization was characterized by a strong engineering habitus resulting from the focus on engineering issues and a high number of employees located at research institutes that are associated with the engineering faculty (82.4%). Other employees of the organization (17.6%) were located at the faculty for natural sciences and mathematics (11.8%), the faculty for economics (3.4%) and the faculty for linguistic and cultural sciences (1.3%). 1.1% gave no indication about their professional allocation. Considering the demographic composition, 86.4% of all employees classified themselves as male and 13.7% as female (Steuer et al., 2017a). 9.7% indicated a non-German background (Steuer et al., 2017a). In sum, the descriptive analysis of the organization shows an organization characterized by a male-dominated, German engineering habitus (Steuer et al., 2017a).

3.2. Method

In the context of the study presented, a quantitative approach was pursued at the level of the employees. In the absence of comparable studies in the application case of scientific organizations and against the background of the identified special framework conditions of research associations (see Section 2.2), the scales were developed based on the actual analysis of the organization. For investigating human mindsets and attitudes toward diversity, a further basis was formed by Schein's (2004) *Three Levels Conceptualization of Organizational Culture*. The *Three Levels Conceptualization of Organizational Culture* differentiates three interrelated aspects of organizational culture: artifacts, values and assumptions. In this context, *assumptions* stand for unscrutinized beliefs and are taken for granted. In contrast, *values* represent principles, standards and aims shared in the organization, whereas *artifacts* stand for visible and tangible traditions and places (such as "open door" policies, public areas for exchange, etc.) (Schein, 2004). Distinguishing these three elements that form an organizational culture, the survey focused on personal assumptions, mirrored in the evaluation of the effects of diversity categories on working contexts and the investigation of subjective assessments of perceived diversity. In doing so, the categorization and analysis of diversity followed the *4 Layers of Diversity Model* by Gardenswartz and Rowe (1998), dividing diversity categories by how influenceable, manageable and malleable a characteristic is from the company perspective, with the aim to derive appropriate diversity management measures. The focus was placed on diversity categories that are concentrated on by the DFG as a funding institution with corresponding concepts that make the respective diversity categories a subject of discussion. However, to be able to capture a further perspective on diversity, diversity categories based on Gardenswartz and Rowe (1998) were added, which are linked to the reality of the target group's lives. Furthermore, values were investigated in asking participants

for the perceived significance of diversity in the respective organization. The question was deliberately asked about the personal perception of the significance, as it is linked to a needs-oriented diversity management approach.

To reflect the influence of management and leadership on the organizational culture, the survey topics basing on Schein's approach (2004) were extended with elements of the Organisational Culture Assessment Inventory (OCAI) (Cameron and Quinn, 1999). The OCAI questionnaire is a quantitative tool to determine the prevailing but also the desired corporate culture (Wiener, 2018; Cameron and Quinn, 1999). The survey enables the investigation of four culture types in organizations (clan culture, adhocracy culture, hierarchy culture and market culture). Capturing the meaning of organizational structures and leadership, the target group was also investigated regarding the perceived hierarchies, perceived leadership style and innovation management approaches. The leadership styles were investigated after the leadership style classification model by Tannenbaum and Schmidt (1958), distinguishing between consultative, cooperative, authoritarian, participative, patriarchal and democratic leadership styles and thus showing a wide range of different leadership styles prevailing.

Basing on Schein's (2004) *Three Levels Conceptualisation of Organisational Culture* and the *Organisational Culture Assessment Inventory (OCAI)* and following the idea of identifying certain mindset types prevailing in a target organization, a cluster-specific questionnaire was developed, which reflects the scientific focus on the topics of diversity and innovation as no reliable and validate sets could be identified that reflect the specific requirements of the target organization (Steuer-Dankert, 2020). Using a six-tiered Likert scale (1 = completely disagree, 6 = completely agree), employees were asked about their perception and self-evaluation of the topics mentioned above (e.g., "*I am of the opinion that in my institute the importance of diversity is too high/sufficient/too low" or "I would describe the leadership style at my institute as consultative/cooperative/authoritarian/participative/patriarchal/democratic"*). In asking for the three categories "*too high," "sufficient" and "too low,"* the intention was to ask for the subjective and individual perception of the interviewees regarding diversity. The Likert scale was selected as a suitable instrument for the measurement of attitudes in understanding attitudes as the emotional, mental and action disposition toward an environmental factor (Albers et al., 2009). In doing so, the range of measurement is ordinally scaled, assuming that the target group considers the intervals between the answers as equal (Völkl and Korb, 2017).

Data were analyzed using an SPSS-supported cluster analysis (Two-Step), rank correlation and contingency correlation. Depending on the given scale, rank correlations (ordinal scaled data) and contingency correlations (nominal scaled data) were applied for preliminary identification of highly correlating variables whose influence would affect the significance of the clusters. Consequently, highly correlating variables were expressed with Kendall's tau-b or Cramer's V and less correlating variables with the Two-Step cluster analysis. The cluster analysis aims a division of persons into groups (clusters), which are characterized by similarities in several characteristics (Janssen and Laatz, 2017). As a result, each cluster should be as homogeneous as possible, which implies that the clusters should be

as heterogeneous as possible among each other (Steuer-Dankert, 2020). In the following, the results of the analysis are discussed.

4. Results

Against the background of the large amount of data, individual results are presented below, which give an insight into the reflection and perception of diversity in the context of the research object presented. The main focus is on the results that allow conclusions to be drawn about needs-oriented diversity management. In order to make the traceability of the results more transparent, they are presented in sub-chapters below.

4.1. The Perception of Diversity and Innovation Management

To investigate the diversity mindset in the CoE, the subjective importance of diversity was investigated and combined with the perceived importance of innovation management. Since diversity can be considered as an innovation factor (see Chapter 1), the intention of this approach was to experience and combine the perception of the importance of both concepts. Participants were asked whether they regard the status of diversity as well as the perceived significance of innovation management as *too high, sufficient* or *too low*. In order to be able to identify differences based on organizational anchoring, questions were asked about the perception of diversity and innovation management in the CoE as well as in the respective research institute as a daily working environment. This yielded further insights into the extent to which the target group differentiates between the two organizations.

Results show that the significance of diversity and innovation management tend to be perceived similarly. Focusing on the significance of diversity, a slight deviation can be seen at the institute level where the significance of diversity seems to be perceived as less important compared to innovation management. A more detailed analysis of the perceived importance of diversity and innovation management based on Kendall's tau-b (Arndt et al., 1999) indicates that CoE members do not differ in their perception on diversity between the respective research institutes and the CoE on an organizational level. This is expressed in a weakly positive, highly significant correlation indicated by a Kendall's tau-b of 0.296 (*sufficient* importance of diversity) and 0.298 (*too low* importance of diversity). Similar results can be determined in the comparison of the perception of the importance of innovation management between CoE and institute, showing weakly positive correlations. For example, innovation management is perceived as *sufficient* in the CoE and in the respective institute (0.191). Regarding a perceived significance as *too high*, a highly significant correlation can be identified (0.460), shown both in the CoE and in the research institutions.

4.2. The Perception of Diversity Categories

The survey of perceived diversity aimed at the extent to which individual diversity categories are reflected. Within the framework of the survey, diversity categories

were implemented that are part of the yearly collected DFG questionnaire and supplemented by individual diversity categories from Gardenswartz and Rowe's *4 Layers of Diversity Model* (see Chapter 2.3). This led to the investigation of the perception of the following categories: (a) age, (b) professional background, (c) gender, (d) professional experience, (e) physical abilities, (f) origin, (g) religion, (h) way of working, (i) first language and (j) culture.

Testing all diversity categories, the analysis shows a strong predictor importance for *origin* (Predictor Importance: 1.00), *mother tongue* (Predictor Importance: 0.72), *religion* (Predictor Importance: 0.67), *culture* (Predictor Importance: 0.52) and *gender* (Predictor Importance: 0.29). Consequently, those categories fulfill the prerequisite for an explorative study and were taken for the Two-Step cluster analysis. Due to the insufficient predictor importance of the other variables, an exploratory investigation of the other variables was not expedient, which considerably limited the investigation of perceived intersectionality.

Further analysis is needed to determine the extent to which the perception of specific diversity categories is related to the perceived importance of diversity. The perceived importance of diversity is considered in the context of the respective research institute as a daily working environment. Combining the diversity categories mentioned above with the item "*perception of the importance of diversity in the frame of the research institute,"* the cluster analysis shows two clusters (silhouette dimension for cohesion and separation: 0.6, cluster quality: good), consisting of 44 persons (see Fig. 19). The clusters can be described as not completely homogeneous, but clearly distinguishable in those who perceive their institute as diverse in terms of the diversity categories mentioned above (59.1%) and those who tend not to perceive diversity (40.9%). Despite the difference in perceiving certain diversity categories, both groups predominantly classify the value of diversity as *sufficient*. Analyzing the demographic data of the participants (e.g., gender, age, origin) in a context with the perception of diversity, also two clusters can be identified (silhouette dimension for cohesion and separation: 0.5, cluster quality: middle). The clusters illustrate that the perception of diversity seems to be independent of age, gender and origin, since all demographic data can be found in both the cluster that perceives diversity and the cluster that does

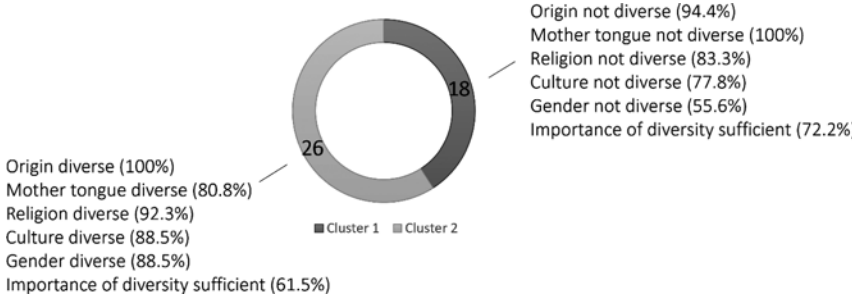

Fig. 19. Clusters Perceived Diversity and Perceived Importance of Diversity (Steuer-Dankert, 2020).

not perceive diversity. As a result, the perception of diversity does not seem to be determined by specific diversity characteristics. Thus, it is ambiguous which factors influence the perception and the subjective importance of diversity.

4.3. The Perception of the Benefits of Diversity

In the context of the previously discussed diversity beliefs and the associated diversity mindset in accordance with van Knippenberg et al. (2013) (see Chapter 3), it is necessary to examine the extent to which individual diversity categories are attributed in the context of project work. Following on from the connection between innovation and diversity examined in Chapter 4.1, this analysis focuses on the explicit connection between individual diversity categories and the perceived advantages and disadvantages of diversity. Both require diversity management, but each requires a different approach depending on its characteristics.

In this analysis, the perception of benefits of diversity was combined with the diversity categories mother tongue, culture and gender as those diversity categories were characterized by a high predictor importance (see Chapter 4.2). The analysis of the influence of the perceived impact of diversity on collaboration discovered five clusters (silhouette dimension for cohesion and separation: 0.7, cluster quality: good) (see Fig. 20). In the first cluster (28.8%, 14 persons), only gender diversity was perceived as beneficial, whereas cluster 2 (10 persons) and 3 (10 persons) reject the benefits of mother tongue diversity but differ in the perceived importance of diversity. In cluster 4, 8 people (17%) indicated that all three diversity categories are beneficial to cooperation but evaluate the importance of diversity as *sufficient*. The fifth cluster (6 persons) is characterized by a general rejection of the benefits of all diversity categories considered, with a simultaneous perception of diversity as *sufficient* (10.6%). While in cluster 4 the importance

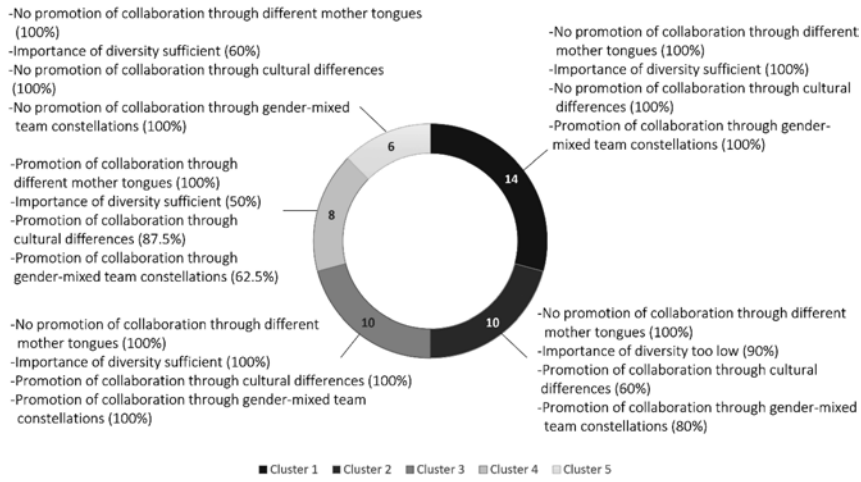

Fig. 20. Cluster Perceived Importance of Diversity and Perceived Benefit of Diversity.

of diversity in the respective research organization is classified as *too low* (21.3%), in cluster 5 it is classified as *sufficient* (21.3%).

In summary, very different perceptions can be identified regarding the benefits of individual diversity categories. Thus, there are also different diversity mindsets and a different appreciation of diversity with regard to this topic area.

4.4. The Perceived Importance of Diversity and the Impact of Leadership Style

Looking at Schein's (1990) definition of organizational culture in a context with Social Cognitive Theory (Bandura, 1999) and social categorization (Tajfel, 1981) (see Chapter 1.2) allows the conclusion to be drawn that the prevailing leadership style can have an impact on organizational culture and the perception and appreciation of diversity. Therefore, the focus of the next cluster analysis addresses the impact of the leadership level.

Investigating the perception of Tannenbaum and Schmidt's (1958) differentiation of leadership styles is the starting point for analyzing the impact of the management level on the perception of diversity. In a pre-analysis, the predictive influence was measured to select the perceived leadership styles with the highest significance. The analysis revealed a focus on the authoritarian (predictor importance: 0.93), patriarchal (predictor importance: 0.37), and cooperative leadership (predictor importance: 0.18) style, resulting in negligence of the participatory, democratic and consultative leadership styles which already can be seen as a first result when analyzing organizational culture in a research organization. The connection of the perceived leadership style with the perception of diversity reveals three cluster (silhouette dimension for cohesion and separation: 0.6, cluster quality: good) (see Fig. 21), which are characterized by being not clearly distinguishable. Whereas cluster 1 (42.6%, 20 persons) and 3 (25.5%, 12 persons) are characterized by perceiving a cooperative leadership style, a different perception of the value of diversity as *sufficient* and as *too low* can be identified. Consequently, no conclusions can be drawn from the leadership style on the perceived value of diversity.

To investigate the role model function of the management level, the leadership style prevailing at the institute and the perception of the individual leadership

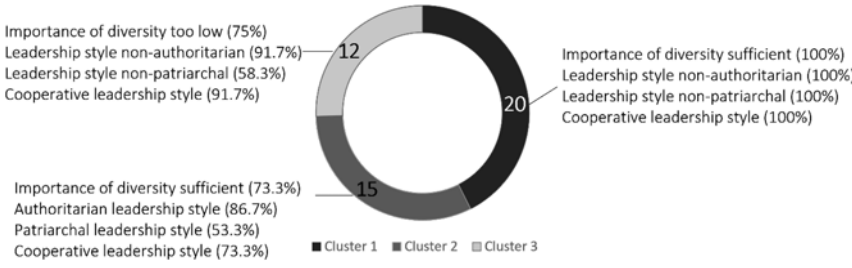

Fig. 21. Clusters Perceived Importance of Diversity and Leadership Style at the Research Institute (Steuer-Dankert, 2020).

style was investigated. The analysis was carried out as a rank correlation (Kendall's tau-b) since the equivalent variables correlate too high and were therefore not suitable for a cluster analysis. The analysis consistently shows medium to strong, positive correlations between the perception of the leadership style exemplified and the individual leadership style (consultative tau = 0.401, $p < 1\%$; cooperative tau = 0.466, $p < 1\%$); authoritarian tau = 0.285, $p < 5\%$; participatory tau = 0.390, $p < 1\%$; patriarchal tau = 0.481, $p < 1\%$; democratic tau = 0.500, $p < 1\%$). Consequently, a similar perception can be observed on employee level with regard to the perceived leadership style practiced by their management level at the respective research institution and the perceived individual leadership style.

5. Discussion and Implications

"[…] [P]ro-diversity beliefs seem to prevent negative effects of subjectively perceived diversity and thus might be able to facilitate positive consequences of diversity" (van Dick et al., 2008: 1483). A supportive organizational culture that has a positive effect on the perception of diversity can make a significant contribution to harnessing the potential of diversity. Following van Dick et al. (2008), the present study aimed at shedding light on the interrelations between organizational cultures in a research organization by investigating the perception of diversity and leadership styles on employee level. Following a system-theoretic approach, the study aimed first to capture the special framework conditions of public teaching and research organizations (Section 2), in this case a CoE at a technical university. Secondly, the status quo of perceptions and, associated therewith, the prevailing organizational culture were investigated on employee level (Section 3). Combining these two steps, the results form the basis for the development of a targeted diversity management strategy, which tackles the needs of the target group and considers the specific framework conditions of the target organization.

In the context of the research programme, a further analysis was conducted on the leadership level, investigating the perception on diversity in a qualitative study, which is not part of the present paper (for further information, see Steuer-Dankert, 2020).

The results of the present studies reveal specific mechanisms and structures that need to be considered when developing a diversity management strategy for a research organization. Resulting from system-specific hierarchies in the scientific sector and a direct dependence on the professorial level within the doctoral process, a direct role model function of the superior, in this case the professorial level, can be determined. Interesting in this context is the identification of the three leadership styles – authoritarian, patriarchal and cooperative – with a main predictor importance which allows conclusions to be drawn about the prevailing organizational cultures in the research institutes. Consequently, a successful implementation of a diversity management approach in a research organization requires, on the one hand, the active involvement of the employee level by investigating the prevailing organizational culture, but on the other hand, the active implementation and engagement on the professorial level right from the beginning. The need for this is also exemplified by the investigation of

the perceived leadership style performed by the management and the individual management style. In the analysis, the similarity indicates the exemplary function of the management and thus supports the top-down approach for diversity management especially in research organizations. The reason for the similarity between the individual and the exemplified leadership style can be explained either by the adaptation of the exemplified leadership style or the preference of the employee to work with a person with similar attitudes. This corresponds to Kanter's (1977) theory of *Homosocial Reproduction* (Gutting, 2015, Volpone, 2013, Kanter, 1977), describing a (mostly male) principle of promotion, and expressing that those male leaders in many organizations promote a relatively homogeneous group that is similar to themselves in norms, values, interests and abilities (Müller and Sander, 2005). This leads to the fact that leadership positions are passed on to people with similar characteristics and therefore potentially similar stereotypes. Thus, the presented analyzes support the need for applying a system-theoretical approach to capture the organization-specific framework conditions.

Due to the identified organizational complexity of CoEs and the external influencing factors on research organizations, a separate analysis of the respective research institute and the CoE as overarching organizations was necessary. The results show that the employee level does not distinguish between both organizations. As a result, it can be concluded that to achieve a sustainable effect, a diversity management strategy must be designed that is applied at both organizations – CoE and respective research institutes – and has a correspondingly broad and stringent application. This relates to the consolidation or alignment of management approaches and thus a focus on the management level as a key position in the implementation of a diversity management approach.

In conclusion, the studies confirmed that top-down implementation strategies are an important aspect when implementing diversity management especially into a research organization. Due to the scientific landscape, the autonomy of science and the resulting autonomous research organizations, a strategy development should start with a participatory process involving all decision-makers that are related to the CoE. Since resistance is to be expected with corresponding restructuring processes and a necessary transparency of internal organizational procedures, it should be considered to what extent incentive systems can enable an opening for this first important step. Thus, diversity management measures should first consider the target group of the management level and sensitize for the necessity of active reflection on diversity management in the target organization. Consequently, regarding the appreciation of diversity, a reflection on leadership and the impact on the organizational culture must take place at the professorial level at the respective research institution. This goes in line with Vedder (2006) stating that a transparent integration of a corresponding project into the organizational structure and the explicit support of the organizational management are important to achieve openness toward the project (Vedder, 2009). In doing so, an active communication of the necessity to establish a diversity management strategy that takes diversity into consideration is required (Schwarz-Wölzl and Maad, 2004).

To address the complexity of the CoE as a research organization, an approach is needed that could be effective at both the management level of the institute and at the central CoE level. A cross-organizational culture should be established with shared values, goals and standards that are stringently lived in all associated research facilities. Thereby, the establishment of a common values system is accompanied by a change, which, according to the change management approach of Kotter (2011), is first triggered by the recognition of a need. Furthermore, it is important to anticipate psychological effects such as reactance that accompany a change and, due to the role model function, to make the management level aware of the individual role and the impact on the employee level.

Considering the special framework conditions of the scientific research landscape, restrictive changes in structures and the removal of structural barriers is necessary. Pushing this change from external, the DFG as a central funding instrument could act as a change enabler, laying the fundament for change and enabling research organizations to change by reorganizing and removing structural barriers.

Regarding the limitations of the study, it must be reiterated that surveys provide a snapshot of a given situation. Consequently, the continuous evolvement of organizations as micro-societies needs to be taken into account, especially against the background of the Wissenschaftszeitvertragsgesetz (WissZeitVG) and an associated employee fluctuation. A further limitation can be seen in the fact that quantitative studies allow the investigation of correlations, but do not reveal causal connections. Hidden motives for the perception of the importance of diversity can therefore only be divined and must be investigated within a qualitative approach. Furthermore, to measure the reliability and validity of the applied research design and especially the quantitative questionnaire, the study could be transferred to other clusters in further research projects.

Furthermore, numerous questions arise for further research approaches within the framework of the overarching research question. Studies on the relationship between the preference for specific leadership styles and the respective professional culture would also be interesting in order to better understand the development of the resulting organizational cultures.

Implementing a sustainable diversity management strategy in a research organization is a continuous process that not only requires the participation of all stakeholders, but also starts at the professorial level, the members of which can make a change by being active role models. Diversity management is no less than a change in culture where each person is highly esteemed and free to develop their talents independent of their individual background, to their benefit and to that of the whole organization.

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