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Abstract

The main research area of this paper is about team performance in multiculturally diverse teams. The starting point of the scientific research consisted of a literature review including popular papers and articles dealing with the subject. Basis for the review is an article released by the Institute of Operations Research and the Management Sciences, located in Maryland, USA. The article with the title “Cultural Brokerage and Creative Performance in Multicultural Teams” illustrates how multicultural in- and outsiders can lead to better results in a group and an increased creative performance. Another highly important basis for this topic is “Work Group Diversity and Group Performance” by Daan van Knippenberg, one of the leading researchers in the field of organisational behaviour.

Amongst other papers, the literature review serves as the foundation of the empirical study in this paper, which includes a field experiment with more than 50 international students of a master class in the area of strategic management. The students worked on a case study in an international context. Students were randomly assigned in teams of two. After the experiment, every individual filled out a personal questionnaire regarding the cultural background and some basic facts about themselves and their families.

The answers provided by the students were graded according to their level of innovativeness, practicability and level of cultural relatedness to the countries mentioned in the case study.

The collected data was consolidated, analysed and statistically verified by various tests. Results of the experiment represent the basis for the discussion how international diversity affects team performance as well as how the results are corresponding to existing literature and experiments. Furthermore, we analysed whether there is a substantial advantage of diverse teams and if yes, which kind of group constellations and processes diversity can affect. In case of disadvantages, it must be clarified which circumstances trigger biases and harm results and efficiency.

Results of the empirical field study showed a very controversial picture compared to the given results deriving from the literature review. While scientific writings brought up the point that the broader cultural knowledge leads to more innovative and creative solutions, our experiment showed better results in more homogenous groups. Nevertheless, interesting interlinks have been identified in context with the moderating variables on the overall performance indicators.

Abstrakt

Diese Arbeit aus dem Forschungsbereich "Organisationsverhalten" beschäftigt sich mit der Teamleistung von multikulturellen Arbeitsgruppen. Ausgangspunkt der wissenschaftlichen Arbeit ist ein Literaturüberblick mit Beiträgen und Artikeln bekannter Forscher, welche sich diesem Forschungsgebiet gewidmet haben. Grundlage der Arbeit stellt ein wissenschaftlicher Artikel mit dem Titel "Cultural Brokerage and creative performance in multicultural Teams" des Institute of Operations Research and the Management Sciences, Maryland, USA, dar. Dieser zeigt auf, wie multikulturell heterogene Arbeitsgruppen durch ihr erweitertes Wissensspektrum zu kreativeren Ideen und einer gesamtheitlich besseren Leistung als homogenere Gruppen kommen können. Eine weitere wichtige Grundlage zu diesem Thema stellen die Forschungen des holländischen Universitätsprofessor Dr. Daan Van Knippenberg dar. In seinem CEM Model (Categorization Elaboration Model) beschreibt er die Zusammenhänge und Prozesse rund um Diversität in Arbeitsgruppen und Gruppenleistung.

Die Literaturrecherche dient als Grundlage für den empirischen Teil dieser Arbeit, welche einen international Fallstudie mit mehr als 50 internationalen Studierenden einer Masterklasse im Bereich Strategic Management beinhaltet. Die Teilnehmer wurden nach dem Zufallsprinzip in Zweierteams zugeordnet. Nach dem Experiment füllte jeder Teilnehmer einen Fragebogen über seinen kulturellen Hintergrund sowie einige weitere persönliche Daten aus. Die erarbeiteten Ideen wurden nach dem Grad an Innovationsfähigkeit, Praktikabilität und besonderen kulturellem Bezug zu der Fragestellung bewertet. Die gesammelten Daten wurden zusammengeführt, analysiert und durch verschiedene Tests statistisch verifiziert. Die Ergebnisse des Experiments bilden die Grundlage für die Diskussion darüber, wie sich internationale Vielfalt auf die Teamleistung auswirkt und wie die Ergebnisse mit bereits vorhandener Literatur und Experimenten übereinstimmen. Wir analysierten, ob kulturell diverse Teams einen Vorteil oder Nachteil gegenüber homogenen Teams haben und wenn ja, was diese beeinflusst. Die empirische Feldstudie zeigte ein sehr kontroverses Bild im Vergleich zu den Ergebnissen aus der Literaturrecherche. Während wissenschaftliche Artikel den Punkt aufwarfen, dass das breitere kulturelle Wissen zu innovativeren und kreativeren Lösungen führt, zeigte unser Experiment bessere Ergebnisse in homogenen Gruppen. Dennoch wurden zwischen den moderierenden Variablen und den Leistungsindikatoren interessante Zusammenhänge festgestellt.

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List of abbreviations

CEM.....	<i>Categorization Elaboration Model</i>
USA.....	<i>United States of America</i>

1. Introduction to Work Group Diversity and Team Performance

In the first part of the paper I will give an extended overview about the topic of diversity and its linkages and effects on performance, creativity and innovation. It will also provide an introduction of included variables and an explanation of their links and interrelations in various models defined in the past.

Organizations are made up of people to fulfil a particular objective or purpose. In the past, organizations always tried to become more and more efficient and successful, since the pressure from share- and stakeholders increased substantially. Due to this and globalization, entities tried to optimize and create the most valuable work groups, by hiring the best talent from all over the world. Coordination and communication within a group are essential and a main key of performance and efficiency. Independent of the structure or the objective of the organization, working groups are always highly complex due to the organizational behaviour of its individuals. (Van Knippenberg, D.L. 2007) Due to the importance of this topic, it became one of the most important and popular research areas for private and public organizations, as well as for companies and entities around the globe. One of the most popular researchers in this field is Daan Van Knippenberg, professor of organizational behaviour at the Rotterdam school of management. (Rotterdam school of Management Erasmus University, 2019)

Essential advantages of highly diverse work groups over homogenous ones or individuals are that they benefit from a broader and bigger range of perspectives, knowledge as well as a more diverse expertise and background. This in fact can enhance creativity and innovativeness as well as the overall outcome and performance in general, because it can increase the information elaboration and decision-making process. However, in practice, working in highly diverse groups often seems to be more complex, resulting in problems and harming higher performance along the way.

Diversity in this context is characterized by the difference of an objective and subjective personal trait between people within a group. Therefore, diversity researches examine, whether there is a difference in the performance between highly diverse and homogenous groups. Diversity in work groups can have a lot of different forms and dimensions. Among others, this can be gender, ethnicity, age, income, skin or hair colour as well as in an educational, functional or cultural context.

Independent of the individual differences, the paper always tries to investigate the processes and performance within the work group.

Basis of the research is a model with two different perspectives, namely the social categorization perspective and the information/decision making perspective by (Williams & O'Reilly, 1998). Social categorization in diversity studies is supposed to have negative effects on the overall group performance, whereas the information and decision-making perspective is beneficial for overall team performance in diversity studies.

The social categorization perspective analyzes the process in which individuals of a group categorize their team members as ingroup or outgroup, depending on similarities and differences they have with their group colleagues. Teammates with more similarities are categorized into the inner circle, also called as ingroup. People trust colleagues in the ingroup more than others and are more willing to work and exchange information with them. It is assumed that people within the inner circle of a work group have no disruptions in their work, which is the reason why internal group processes, coordination and communication are much easier.

On the other hand, there are people with more differences than similarities who are then categorized as the outer circle, also called the outgroup. Barriers between those different types lead to disruption and inefficiencies in highly diverse teams since team members are less willing to work with colleagues from the personally perceived outgroup. Groups containing a high degree of ingroup people are likely to be very homogenous and not very diverse. In contrast to highly diverse groups, where differences exist between team members. Nevertheless, because of their broader area of knowledge and experience, highly diverse groups are basically supposed to generate more creative and innovative solutions. It becomes more complex and inefficient in medium diverse teams with work group colleagues in the inner and some in the outer group since such teams are at risk to end up in subgroups, which is harming the information elaboration process. (Van Knippenberg, D.L., 2007) People also tend to think more negatively about members of other subgroups than of their own. (Brewer, M. B., 1979)

A substantial factor influencing the creation of subgroups is the comparative fit, which is an indicator for high degrees of similarities, as well as for large differences between group members.

This can be the case for one or more characteristics and fosters positive or negative fit, depending on whether they have similarities or differences. Such a combination of different characteristics is likely to create faultiness among the work group members and can also split a group into subgroups. During group work processes, it is important to avoid stereotypes and biases within the group, which are disruptive. Basically, it is very important to understand intergroup processes in detail to be able to manage involved members, as well as diversity dynamics within the group. (Van Knippenberg, D.L., 2007) However, getting people to know better over time can diminish stereotypes, lead to better relationships and disengage biases. This phenomenon is also known as the contact hypothesis. (Amir, 1969) Further empirical research revealed that surface level differences such as gender or ethnicity became less important over time and deeper surface levels, for example personal skills, came to the upper surface. (e.g., Harrison, Price, & Bell, 1998; Harrison et al., 2002; Pelled et al., 1999). Obvious characteristics such as the surface level are resulting in first impressions and are therefore often responsible for stereotypes. People often create their first opinion based on those factors without further scrutiny, which enhances the formation of stereotypes. For a long time, the relationship between surface level and deep level heterogeneity was not taken into account by researchers. It was either relevant on the surface-level (Pelled, 1996), or at the deep level heterogeneity (Barrick et al., 1998). However, studies have shown that both have to be considered at the same time, since they both have an effect on interdependence and relationship conflict. (Mohammed, S., & Angell, L. C., 2004)

Another aspect raised by (Mitchell, R., & Boyle, M. B) states that diversity is positively correlated with cognitive heterogeneity, as a main factor. Without cognitive heterogeneity, the outcome related to innovativeness and creativity might not outperform more homogenous groups.

The information decision-making perspective states that highly diverse groups possess a wider range of task-relevant knowledge, skills and abilities, which are helpful in generating a more creative and innovate outcome, as compared to homogenous groups or individuals. However, it is very important to exchange, integrate and elaborate on all informal information resources of all group members adequately to generate the best overall outcome. (Van Knippenberg, D., van Ginkel, W. P., & Homan, A. C., 2013)

On a deeper level of integration processes in the work group diversity research area, it is important to focus on mediating processes and moderating variables, which are influencing the overall outcome. This can be done with the Categorization Elaboration Model (CEM) of group diversity and performance. In the middle of this model stands the work group as an information processing system. One of the core processes is the elaboration of task-relevant information of every source, which must be exchanged and integrated between work group members to be successful and to generate a positive outcome through their diversity. Diversity in groups can enable both processes of the categorization elaboration model. It can create information elaboration on the one hand, which would be positive, while on the other hand it can also promote social categorization, which would be negatively associated with team performance in diverse teams. As a result, managing diversity in work groups means to support and encourage information elaboration, as well as integration of resources and to avoid social categorization to the best extent possible. (Van Knippenberg, D.L., 2007)

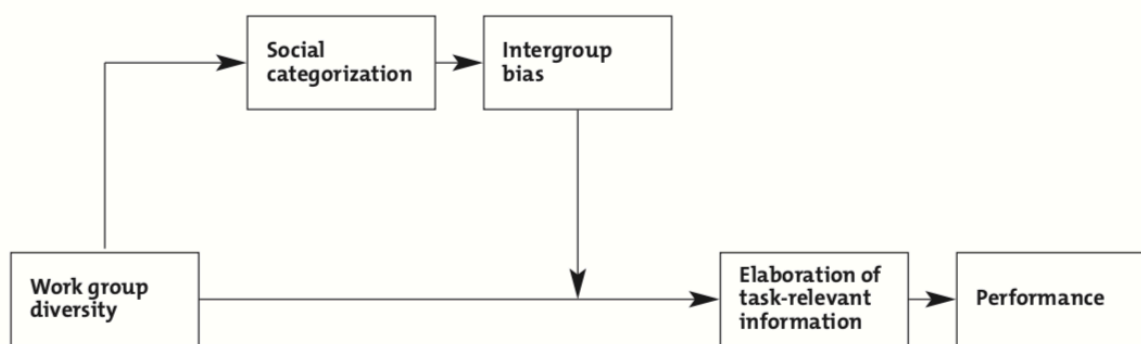


Figure 1: The Categorization-Elaboration Model¹

In a next step we will try to explain how the CEM process works, which can be seen in figure 1.

The process starts with the composition of a highly diverse work group and then splits into the two previously explained processes, namely social categorization and elaboration of task-relevant information. In a side process, social categorization can change to intergroup bias and then affects the core process of information elaboration directly. It is important to avoid such intergroup biases and encourage work group diversity management actively so that the information elaboration process is as smooth as possible without any disruption harming the performance or outcome. (Van

¹ Van Knippenberg, D.L. 2007

Knippenberg, D.L., 2007) Therefore, it can be said that social categorization works as a moderator for the information elaboration and decision-making process. (Van Knippenberg, D., & Schippers, M. C., 2007)

A more detailed version of the Categorization-Elaboration model, developed by (Van Knippenberg, D., De Dreu, C. K., & Homan, A. C., 2004) with a thorough formulation of all possibly engaged variables, mediators and moderators can be found below in figure 2. The number of variables and moderators are probably one of the main reasons why studies in the past came up with such different results and inconsistent findings. (Van Knippenberg, D.L., 2007) Studies such as (Austin, 1997) found out that more heterogeneity in teams leads to more innovativeness and creativity and therefore enhances the overall outcome, whereas meta data analyses of (van Knippenberg, De Dreu, & Homan 2004; Webber & Donahue, 2001) resulted in inconsistent, negative, or no relationships.

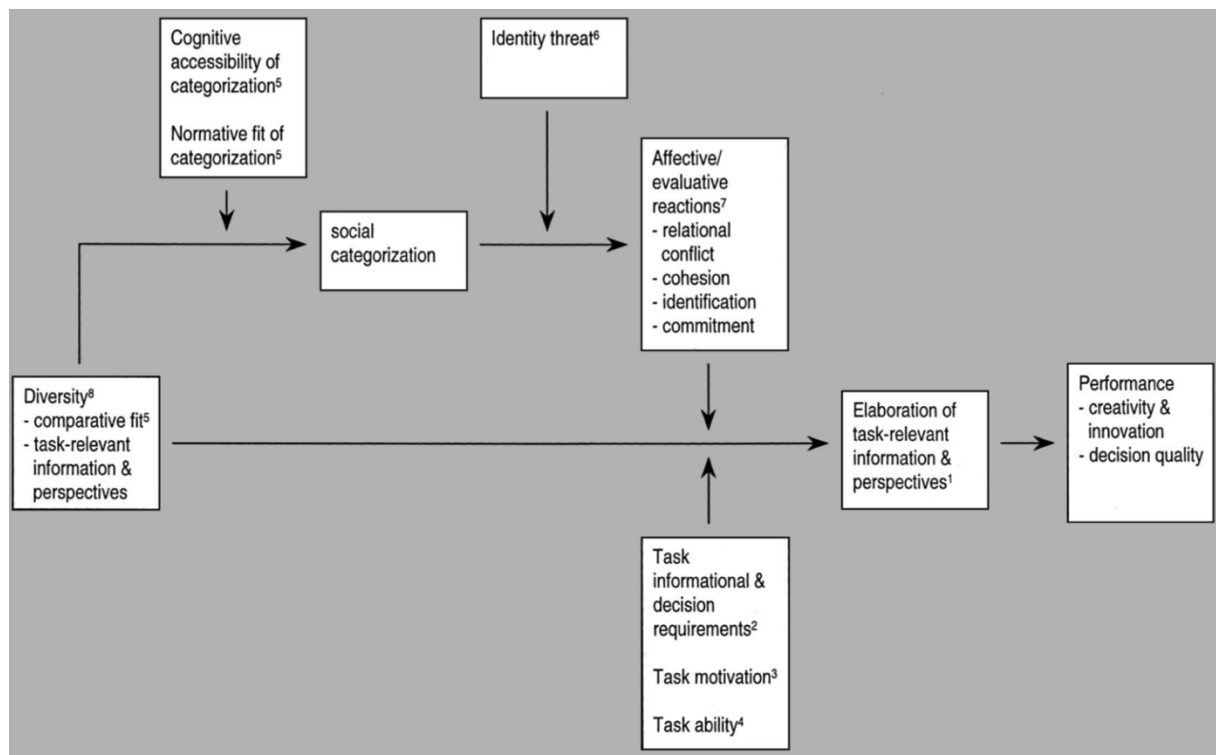


Figure 2: An extended view of the categorization-elaboration model (CEM)

As inconsistent findings in the past showed, interrelations between diversity, social categorization and information elaboration have been underestimated, when taking into account the overall outcome. Moreover, a lot of smaller variables, mediators and uncontrolled mediators of the environment have been ignored.

The CEM is the first model which also takes the interrelations between variables, as well as possible reactions into account. This could result in better control and transparency over variables and an improved understanding of core- and subprocesses, since it splits complex processes into smaller ones with more variables, enabling a faster process towards an adequate and improved work group diversity management. As mentioned above, information elaboration stands for information exchange, discussion and integration of ideas from all possible information sources to generate the best outcome. Since information elaboration is positively correlated with creativity, innovation and decision quality, it can be said that a higher integration level of work group members and a better information exchange leads to a better outcome, with respect to other variables.

Integration and exchange processes of work group members can achieve better outcomes if involved people have greater communication abilities and are therefore able to present information better than others. Another main factor is the language between group members. Information elaboration and exchange is easier when all members are speaking the same language. Furthermore, time pressure can also influence the outcome of a case study, since people act differently when they have to fulfil their tasks in a given time. In addition, the environment can have an influence on the effectiveness and efficiency of the information elaboration process. Another essential factor that determines the efficiency and quality of results in general is how each work group member fits into the group and their ability to interact with the group. You need different types of members in a group to achieve the best possible outcome.

What can be said is that among other factors, inconsistent findings of studies in the past derived from an uncontrollable environment and mediators, which are changing from one experiment to another. This can be for example the distribution of abilities within a group as well as the available group knowledge, when compared to which skills are required for an exercise. What is more, studies have shown that various characteristic differences are leading to different kinds and levels of social categorization and biases. Not all kinds of differences are task relevant and result in remarkable or notable issues for work groups. However, it became clear that all kinds of diversity trigger information elaboration processes as well as social categorization processes. Additionally, every dimension of diversity can activate social categorization and information elaboration. Due to a complex system with many different variables, studies have shown that highly diverse teams need

time in the beginning, when they are still outperformed by homogenous groups. Nevertheless, over a longer period of time, diverse groups learn how to integrate and use their advantages to outperform homogenous groups. They learn about other cultures and start to become more open minded to diversity than in the beginning. This helps a group to become more efficient and productive and can lead to better outcomes in follow up tasks. Moreover, it can even help spreading this mindset to other people within an organization and thus can probably change the mindset of some parts of or even a whole organization. However, it can also happen that more differences are revealed within groups over time, which then leads to more disruption and biases, harming performance and efficiency. It is a complex process of interaction to find out “who knows what”, to develop a shared common sense and to learn how to best use potentials within a group. This can also have an influence on the performance of groups, because some teams or at least members are more experienced in how teams interact, especially in highly complex diverse teams. After a certain period of time, a transactive memory helps to know whom to consult in different situations and whom to ask in case of a certain problem statement. (Van Knippenberg, D., De Dreu, C. K., & Homan, A. C., 2004)

It is important to avoid the change from social categorization to intergroup biases and therefore negative effects on the information elaboration and integration exchange process, to ensure the best possible results and performance. One option would be to influence the team composition and in return avoid intergroup biases. However, since the teams are fixed most of the time, the main question is how to react and avoid intergroup biases to ensure the maximum outcome. The potential benefit of work group diversity might be limited to more sophisticated, highly complex and non-routine tasks, since in these cases a broader knowledge and wider experience is necessary to generate adequate solutions. These tasks typically occur in research and development teams, as well as on top management level, where it is necessary to combine knowledge und experiences to find the ideal solution for a problem statement or to generate new ideas with the help of different already existing levels of knowledge.

Another main point in this context is the motivation and accountability of team members. Different studies have shown that groups are achieving better results and outcomes, if they are held accountable and responsible for their decisions and generated ideas. What is more, incentives and motivation are also very important for group members to get everything done in the right manner and achieve a

better result. Another kind of motivation is the diversity belief which states that people who are supporting highly diverse teams are more willing to work in such teams, engage positively and are therefore able to avoid intergroup biases as well as other negative aspects and in return gain additional benefits from diverse teams. People who view diverse teams negatively are more likely to have negative effects on the whole work group outcome and to harm intergroup processes. Therefore, companies might try to change diversity beliefs or only hire people with positive diversity beliefs. (Van Knippenberg, D.L., 2007)

In the next part, we will look at the role of creativity and innovation in the modern economy. Furthermore, we will investigate the role of cultural diversity in teams and whether there is a relationship with an increased performance in companies.

2. Creativity and Innovation

Globalisation and increased competition in the markets are important challenges for companies nowadays. Production- and service companies alike have to create the most appealing products for customers. However, consumers have become more and more sophisticated over the years. Additionally, competitors try to copy products and services, with only slight changes. Together with the globalisation and cross border movement of goods, prices and costs of products are declining with every innovation. The time between updates in products and services on the market is constantly declining. All these factors combined put pressure on the development and innovation departments of companies. To come up with innovative ideas requires a lot of creativity and is therefore a key factor for the success of companies. Following from these circumstances we would like to introduce the idea of work groups and especially multi-cultural teams. They are supposed to be able to come up with more creative ideas due to a more diverse knowledge, which will be explained in more detail later. In this chapter we would like to focus on creativity and innovation, which will be the two performance indicators used in this paper and later in the field experiment. Creativity is a performance indicator during the creation phase of ideas at the very beginning of a process. It has the mission to produce and generate new ideas for a certain purpose which does not exist yet. Innovation at the same time is an indicator used in the conception and execution phase, describing a

new form of something, (e.g. process, procedure, product, service) which is already implemented in an organisation. Operationalisation of an idea is the ability to use the new and its advantages. As a result, it can be said that both phases are intertwined. However, not only the individuals define whether a work group is successful. (Bouncken, R., Brem, A., & Kraus, S., 2016)

Another factor is the leadership style within a group. Distance and control practices within work groups, who are supposed to deliver creative ideas, harm the performance of such groups, irrelevant of the group composition and cultural background. This was also proven by (Hofstede, G., 1983), when he investigated the influences on productivity by innovation and R&D. This was supported by a field study of companies on a national level. However, it also became clear that if you want people to generate creative and practical ideas, which benefit the company, you need to guide groups through moderation and lead them into the right direction. This was the focus in a different study and performance of generated ideas indeed increased (Bouncken, R., Brem, A., & Kraus, S., 2016)

Robert Westwood explained in his paper “The Multicultural Muse” that creativity is part of the innovation process. In addition, he mentioned that innovation for a company is not only key to compete successfully with other companies and to grow business operations, but it is also a necessary step to survive in a quickly changing business environment. Furthermore, he found that both processes are not limited to the business world. On a much bigger scale, it is also highly important for the development of human beings and societies. Controlling this process as mentioned above and bringing up incentives for people involved in such processes are key activities for managers nowadays. Another important point, with respect to the upcoming case study, is that creativity and innovation are also depending on the cultural background. While people in the western world are trying to generate ideas on their own and are therefore well known as creative and innovative, Japanese people often act as imitators, since they often try to copy and exploit the ideas of others. In the past, some authorities and governments controlled and limited the creativity of people to support their regime, since it became evident that liberalism fosters creativity and innovativeness. Studies also showed that Russia is perceived as a creative country. Whether a state, an organisation or people are creative and innovative or not can be reduced to many different reasons. Main factors are values, religions and beliefs which shape the mindset and attitude. Together with the environment and other external circumstances comes a specific direction or creativity awareness. Regarding the

performance indicators which will be used later in the field experiment, Westwood raised the “Triarchic Theory” stating that intelligence consists of three parts, namely analytical, creative and practical intelligence. In this model, all three categories together lead to the level of intelligence. For the study we assumed that intelligence is normally distributed among people, which is also shown by the Bell curve. Creativity is supposed to consist of cognitive processes paired with intelligence. Since we assume that intelligence is normally distributed between people, every human being should have the same ability to generate creative ideas. Also, we expect all people to have the same creative capacity. Nevertheless, people utilise their capacities and develop necessary skills differently, as in all other areas of life. (Westwood, R., & Low, D. R., 2003)

To finish the section, we look at the paper by Ali Taha et. al. They described creativity as a core capability of every company competing in the markets. Notable is that he identified five essential factors driving organisation towards creativity and innovation. First of all, a stable long term financial performance, which is driven by cost efficiency as well as by a stable or growing demand for the products or services of the company. Both request long term creativity and successful innovations. The second point, which we already mentioned above, is that consumers are continuously demanding innovation in products and services. This factor became increasingly important over the last years. The third factor is extremely important for creative and innovative companies, identified above as mostly companies of the western world, which is the advantage that arises through innovation as compared to companies simply trying to copy and imitate products and services. The fourth point is that innovations enable further innovations. This means that especially new technologies enable further creativity and improvements and provide the basis for new ideas and innovations. Especially for research and development departments is it essential to have an overview over their R&D staff to maximise their innovation. The last factor is innovation triggered by the failure of a current product or service which stopped working mostly due to a change in the business environment. This depicts the worst case scenario for companies since they lose time, money, market share and their competitive advantage over other companies. All these factors force organisations and their managers to establish an agile and adaptive environment and they have to establish a certain mindset within the company to remain successful. Together these five factors explain one part of an organisational culture. Besides the most known definitions for organisational culture such as a shared

system of norms, symbols and values, an organisational culture is also the normative and social glue holding a company together. In this paper, three organisational success factors for creativity could be identified. As mentioned above, motivation within the organisation is essentially important. Additionally, resources matching the tasks and background to generate new ideas and the necessary time and free space to be able to focus are crucial. The third criterion are management practices enabling, supporting and fostering creativity and innovation within an organisation as well as the ability to distribute knowledge about the process of efficiently generating ideas and successfully implementing innovation. (Ali Taha, et. al., 2016) In a field experiment by Gerald Tellis et. al. in 2009 was found that besides capital, labour resources and government regulations, culture is the fourth main driver for creativity and innovation. While examining 759 firms across 17 economies he found out that culture is the strongest facilitator for radical innovation. This was identified across all 17 major economies which were investigated. Once again is organisational culture the strongest moderator and facilitator for the success of creativity and innovation within organisations. (Tellis G.J. et. al., 2009)

The next part is the literature review, where we will further examine the literature, field experiments and results of conducted studies in detail, to derive the hypothesis for our field study, which will then be the main part of the research paper. Moreover, we will elaborate further on the organizational behaviour paper mentioned above by Daan Van Knippenberg through this thesis. In the upcoming part of the thesis we will look at existing literature, papers and conducted experiments, to generate a detailed picture of the status quo in this particular area of research.

3. Literature Review

3.1. Cultural brokerage and creative performance in multicultural teams

This article by Sujin Jang from December 2017 serves as the starting point of the thesis to better understand team performance in multicultural diverse teams. Multicultural people are defined in several scholars as people who internalize knowledge about at least two different cultures. In this context, multiculturalism is very closely connected to the term of “culture”, which is defined as a spectrum of values, patterns, assumptions and behaviours shared between members of a group of individuals to differentiate themselves from others. Elaborating further, the paper states at the beginning of the experiment that organizations with knowledge of several cultures achieve a more creative team performance than monocultural groups. It is important to know that existing literature distinguishes between two different types of multicultural individuals, both are having high and different impacts on the creative group performance. First, there are multicultural outsiders who combine at least two different cultures without having any overlap with cultures of any other team member. This indicates that a group with multicultural outsiders has specific barriers to leverage their knowledge efficiently and successfully. Second, there are multicultural insiders with the same background regarding cultural knowledge. In contrast to outsiders, they have cultural overlaps with other group members and are therefore natural bridges between team members. Such commonalities allow the conclusion that insiders have not any barriers to leverage knowledge and are able to achieve a better outcome than outsiders. Following from this conclusion, it becomes clear that the team composition in such an experiment is a key factor to understand the bigger picture, it therefore needs to be examined as well.

Another term we need to clarify is “creative performance”, which represents the dependent variable in this experiment and also the measurable outcome of assumptions deriving from this paper. Additionally, in existing literature “creative performance” describes the outcome of new and solution-oriented ideas or processes as an answer to an open task. They are developed through interaction between team members. Research assumes that the outcome is enhanced if knowledge, experiences and ideas are brought together from different knowledge sources. Especially in our experiment with a multicultural task, where we need an explicitly creative solution, it is important

how team members are combining their knowledge even without cultural overlaps. Communication within such teams is very important since barriers can lead to negative or at least inferior results.

Regarding the cultural brokerage the paper discusses two different types of brokerage which are highly important for the experiment, since they are the basis for the hypothesis. First, cultural brokerage by integration, which can often be found in groups of multicultural individuals with full cultural overlap, meaning it is mainly used by multicultural insiders. They are using their ability to integrate since they have a broader common area of cultural understanding to build up ideas to achieve the best overall outcome. Moreover, between multicultural insiders there are no or at least fewer cultural barriers, resulting in less time wasted at the beginning of their collaboration, which in turn leads to higher efficiency and productivity. Integrated brokerage means to directly combine and aggregate knowledge and ideas from different sources of your team to achieve a better outcome. Multicultural individuals also have additional personal skills, making it easier for them to be integrative between members, combining ideas and perspectives and generating new ideas based on the input, with a better creative performance at the same time. They are willing to learn about and understand new cultures and are able to accept adverse opinions of team members.

Second, the method of eliciting, which is primarily used in multicultural groups without cultural overlaps by multicultural outsiders, is the more indirect and passive way of cultural brokerage. Cultural outsiders have higher barriers to overcome and must figure out common areas and ideas upfront before starting to generate creative results. They also have lower personal capabilities in terms of knowledge consolidation and aggregation.

For the empirical study, an essential point is the team composition. Every team consists of three members. Two monocultural members and one multicultural, who was either a cultural insider or outsider. In this scenario, people were multicultural if they have lived in two countries for at least 5 five years.

The open task for all participants was to generate ideas for a special ritual, a musical performance and a dish for a multicultural wedding for people from the United States and India. They had 24 minutes for working on all 3 tasks, which were later rated by experts of both cultures.

The experiment wanted to provide evidence regarding the following questions. The first one was whether multicultural individuals including insiders and outsiders are enhancing team performance

of culturally diverse teams. Additionally, it should be proven that insiders enhance creative team performance more than outsiders, as long as no-one serves in a formal role to proactively facilitate collaboration across the culturally diverse group. Moreover, it was assumed that insiders are brokering by integration, while outsiders will broker by eliciting, resulting in an enhancement of creative performance in both cases. The two cases were proven throughout the whole experiment. Cultural brokerage of monocultural individuals had a significantly different influence. Through integration, it had neither a positive nor a negative influence. However, by brokerage over eliciting, it had a highly negative influence. What is more, it could not be shown that brokerage by cultural insiders achieves a better outcome when compared to cultural outsiders. Nevertheless, results showed that multicultural insiders and outsiders are enhancing creative team performance. This depicts an essential finding, since it has been often overlooked and undervalued and could now be corrected, because multicultural outsiders are also able through brokerage to improve creative performance. (Jang, 2017)

Besides the quantitative results, the experiment filled research gaps which had not been addressed adequately in the literature yet and were able to point out perspectives in cultural brokerage which are often overlooked. One key takeaway was the importance of the team composition, because it is the underlying basis for group dynamics and performance. The paper also pointed out that companies and organizations should pay more attention to groups, internal dynamics, team composition and cultural brokerage to maximize creative team performance.

However, due to size constraints and limitations, the results of the paper must be used carefully for further research, since during the 24 minutes of interaction team dynamics and cultural brokerage could not be observed and was out of scope for this study. It was only possible to influence and control the input and measure the outcome of the experiment.

3.2. Ethnic Diversity and Team Performance: A Field Experiment

The second paper of the literature review written by Sander Hoogendoorn and Mirjam van Praag serves as a more practical basis, since it discusses the results of a field experiment with regard to team performance in the light of ethnical diversity, meaning heterogeneity in terms of mother tongue, beliefs, religions and cultural habitats. For many years now, it gets more and more important to decide and collaborate in teams to achieve better results. The business world in particular would benefit enormously from brain storming sessions and collaborative meetings to strengthen and foster team performance. Due to the increase in globalization people come together from all over the world with different skills and strengths. What is more, they are brought together from different cultures, religions and ethnical backgrounds. As discussed in the primary paper, those effects can lead to coordination problems, lack of communication and difficulties with regard to common understanding. Ethnical minorities are substantially increasing and developing more and more diverse teams, especially in international companies and organizations. Moreover, this trend will increase further over the next years, probably resulting in a priority topic for multinational corporations, since they have to learn how to maximize the benefit of such groups and how to minimize problematic interrelationships and group weaknesses. But it is not only the business environment which forces organizations to think about closing cultural gaps and minimizing weaknesses. Globalization and ethnical diversity are also great opportunities to create better teams by actively composing teams, installing diverse teams that benefit outcome, creativity and team performance. These facts depict an opportunity to support research and should serve as a starting point to conduct further experiments such as this field study to fully understand the problems behind and functionality of ethnical diverse groups and related team performance. (Hoogendoorn and Praag, 2012)

Based on existing literature and theoretical knowledge, we assume that a specific degree of heterogeneity within teams is very beneficial for team performance. However, a very high degree of diversity and heterogeneity can bear the risk of communication and coordination difficulties in groups and can lead to inferior outcomes and team performance. In an optimal business world, it must be ensured that teams are well balanced between positive ethnical and cultural diversity and the

additional costs that result from the effort of coordination and communication. (Alesina and La Ferrara, 2005)

Laboratory experiments have a natural limitation, since they are very hard to compare to the real world. As a result, it is more favourable to combine positive effects of observation studies in real organizations, because of advantages of laboratory field experiments, which have essential upsides during the team composition phase. In a field experiment, measuring the academic performance of demographic diverse teams with a size of four to five people with differences in age, gender and ethnicity, no findings or effects could have been observed. (Hansen et al., 2006)

The field experiment had been conducted between 2008 and 2009 with undergraduate students of the Amsterdam University of Applied Sciences. As part of their curriculum, 550 students had to set up and manage a company to the best possible extent. 55% of the students had no Dutch ethnicity and therefore participating students came from 53 different countries. With an average of 12 individuals per group, the proportion of foreign students per group was between 20% and 90%, thus perfect to measure and compare team performance of ethnically low, medium and highly diverse teams. Additionally, the entrepreneurial and strategic management topic was the optimal problem statement, without any advantages for any specific country and therefore an objective and neutral start for all groups. Moreover, it is the perfect task in which an optimal collaboration and communication between all group members is necessary, plus an integrated and advanced brokerage is necessary to achieve the best outcome. (Hoogendoorn and Praag, 2012)

The trade-off between additional costs and added benefits in multicultural teams in the context of brokerage was illustrated based on existing literature as a non-linear function, with the following assumptions made before the field experiment. (Lazear, 1999)

First of all, in case of a minor diverse team, meaning a low proportion of foreign individuals, it was assumed that the minority will be left out and therefore not actively participating in the case study. This was supposed to result in the loss of potentially important knowledge, capabilities and resources. However, communication and coordination costs remained low and no barriers existed within the groups during the project, no substantial brokerage was needed and efficiency high.

The second scenario was that of a medium diverse team, with around 50% of foreign students. It was assumed that subgroups would be build consisting of domestic and foreign groups, which should

increase the costs of communication and coordination. Although there were internal separations, productivity can be high, but cannot be assured. Further negative group developments including dissatisfaction, a lack of coordination and finally a group collapse can be the consequence.

The third scenario, consisted of a highly diverse team of mainly foreign students without subgroups and thus lower communication costs, as well as an almost complete utilization of all team members' resources, including their knowledge and skills. (Earley and Mosakowski, 2000) (Richard et al., 2004)

Following from these assumptions, we can predict to receive a further developed, inverse U-shaped curve, derived from the above described non-linear function defined by Lazear. (Lazear, 1999)

Students were categorized as domestic if their parents were born in the Netherlands.

We will now look at the four key performance indicators of the project that were measured and documented. KPIs were sales, profits, probability of profits and profits per share.

Regarding costs and benefits of diverse teams it can be said that the results of the study showed that highly diverse teams, consisting of members with diverse skills and knowledge, are better suited for high team performance and lead to a better outcome than teams with a lower share of foreign students. However, the experiment was not able to provide evidence that a medium proportion of diversity leads to higher costs in terms of communication and coordination, which would depict the bottom of our inverse U-shaped curve including the worst results. Nevertheless, the positive impact of diversity on team performance starts with a certain degree of diversity within the groups. This was achieved during the field study when at least half of the team was ethnically diverse. (Hoogendoorn and Praag, 2012)

To sum it up, this particular field study provides evidence and support for the idea that multicultural diversity is beneficial for team performance. Throughout the study it became clear that this area of research still represents a large gap in the existing literature and needs further scrutiny. Globalization and multiculturalism of companies on the one hand and immigration on the other hand, including the increase of minorities especially in cities, will force people with different backgrounds to collaborate and work together more and more in the future. Therefore, we suggest examining further literature, especially more practical experiments in the field and we should try to provide further support and evidence for these assumptions through an own case study.

3.3. The effects of Cultural Intelligence on Multicultural Teams Project Performance

This paper by Jacob Eisenberg and Gwilym Williams deals with team performance in multicultural teams. However, this field study differs substantially from (Hoogendoorn and Praag, 2012), since its research question addresses the question whether cultural intelligence and individual skills are able to influence project performance positively in diverse teams. It assumes that multicultural teams are important when it comes to problem statements facing difficult questions, where extremely innovative solutions are needed, since highly diverse teams should perform better than others in such a case. What is more, the research focuses on the question whether individual group members possess special personal skills which qualify them for such tasks. The paper also mentions “Cross Cultural Capital”, meaning people owning extraordinary cultural intelligence to increase group performance. However, no evidence was found that it is beneficiary for routine and non-creative tasks. The author examines the key factors for cultural intelligence and tries to answer the question whether people can be trained and coached to learn this particular skill.

People with a very high level of cultural intelligence are feeling more comfortable in multicultural groups than others. Therefore, they are more relaxed and also make a better impression on the other team members. It is also a special individual ability to effectively communicate and interact with others, deriving from an excellent self-management and an extended knowledge about various other cultures. Such individuals are able to understand similarities between cultures and can expand their knowledge much faster by integrating and enlarging already existing knowledge. (Eisenberg and Williams, 2012)

There are 4 explicit knowledge areas splitting up and describing cultural intelligence on a more granular level. Cognitive and metacognitive cultural intelligence focus on understanding similarities and differences across cultures as well as on high-level processes of comprehensive understanding of intercultural interactions. Motivational cultural intelligence is the indicator regarding the willingness to learn about new cultures and of the motivation to care for cross-cultural connections. Another important aspect is behavioural cultural intelligence, which makes people able to detect verbal and nonverbal actions that are different from their own and gives them the ability to react accordingly. (Earley and Ang, 2003)

The field experiment was conducted with master students at two major European business schools. The students were enrolled in a business projects class for a whole semester. 14 teams with 3-4 individuals per team performed the experiment, originating from more than 20 different countries. After the semester, participants had to fill out a questionnaire evaluating their own cultural intelligence, which was split into the four dimensions. Objective assistants who joined the teams during the semester had to evaluate their projects with respect to two criteria. First of all, innovativeness and originality of the proposed and submitted project ideas. Secondly, how useful and appropriate the ideas were.

During the final stage, project evaluations were compared to the self-assessment of the students and their personal perception regarding the cultural diversity within the teams.

It became clear that the most important aspect was the participant's motivational cultural intelligence since they felt more comfortable and confident during the project interactions with people from other cultures and therefore produced much better results. In addition, the outcomes were more creative than those of groups with less motivational cultural intelligence. Another important factor is a high metacognitive cultural intelligence in order to accept, tolerate and be able to collaborate with other cultures.

In addition, due to other study results it can be said that cultural intelligence can be enhanced through training and coaching, which possibly expands cultural abilities, especially the motivational aspect and thus lets individuals perform better in culturally diverse teams than before. (Eisenberg and Williams, 2012)

3.4. Bridging Faultlines by valuing diversity:

Diversity beliefs, information elaboration, and performance in diverse work groups

Working in groups and organizations is a very complex and often discussed topic. The question that repeats itself is whether highly diverse teams have more advantages than disadvantages for group performance in general. In addition, in case negative aspects are included, how can we possibly minimize, mitigate and avoid them to improve results. Diversity is therefore a very delicate and emotional topic. This particular paper by Astrid C. Homan and Dann van Knippenberg discusses the

“Diversity Faultline” approach and examines whether diversity beliefs and information diversity in teams has any effect on team performance. (Homan et. al., 2007)

Diversity Faultline is a very new research topic within the area of organizations, analyzing team compositions and their effect on team collaboration and communication. Latest research papers revealed that the creation of subgroups within a team is depending on the team composition and especially on the diversity within the working group. In a hypothetical team of six individuals, including three men with a technical background and three women with a legal background, who would then have to collaborate together to work out a complex solution for a problem statement, it is highly probable that the men and women would create subgroups, which would lead to unnecessary boundaries, resulting in higher costs of communication and coordination, as well as a decrease in performance. Researchers have analysed the following five main attributes including age, gender, origin, professional background and religion for the paper. In order to keep the “Diversity Faultline” small, many characteristics and attributes should be distributed evenly across the team. According to the researchers, the “Diversity Faultline” can also be mitigated by a transformational leadership style and strong diversity beliefs. In addition, the following five mitigation measures were found to support leadership in successfully leading diverse and heterogenic teams, also by using each individual’s capacity to reach the best possible outcome.

First, it is important to pay attention and to actively influence the team composition process. Likewise, leaders have to emphasize similarities between team members. Next, fostering good experiences regarding diversity in teams is crucial, additionally leaders should set themselves as good examples and have to reflect on their own diversity convictions. Lastly, choosing people who believe in the positive value of diversity is another strong point, while ignoring individuals who refuse diversity from early on. (Grabmeier, 2017)

Pro- diversity beliefs in this paper are influenceable to a certain extent by positive experiences, training and practice. Nevertheless, limits exist and depend on the origin and reason of the belief. Three main origins of positive and negative beliefs were identified in the main literature. First of all, experiences from the past resulted in a certain mindset. Second, a set of requirements needed for a certain problem statement makes it necessary to work with people having other capabilities and

characteristics than oneself. If beliefs are derived from there, people are significantly more pro-diversity.

The field study was conducted in groups of four individuals (two men and two women). They were randomly assigned to one of the following 2 x 2 condition matrices of informational diversity (homogeneity versus heterogeneity) and diversity belief (pro similarity versus pro diversity). Informational diversity in this context means whether all team members possess the same level of information. This condition was additionally manipulated during the experiment. The idea of the problem statement was to generate and select ideas as a classic decision-making task. As mentioned above, the information level within groups was the same in some and differed in others to motivate the latter to collaborate and coordinate their communication.

The results showed a significant improvement in groups with a pro-diversity mindset, but not in the opposite case. What is more, the video tapes of the experiment showed that diverse groups with differing information levels had substantially more interactions than others. It became clear that groups with differing information levels need more communication to catch up and to distribute their knowledge within their group. What is more, culturally diverse groups with a pro-diversity belief have an essentially higher willingness to collaborate with others and they believe in the additional value of diverse teams so that the overall team performance profited and increased.

The experiment was able to provide evidence that collaboration and information elaboration is the main ingredient for positive effects of diversity on the overall team performance.

Moreover, it can be said that a substantial performance improvement indicator is information diversity, since it requires and fosters joint communication and prevents the creation of subgroups. What is more, it is important to notice the strong relationship between diverse teams and the belief in diversity by the individuals within the group. However, in this experiment, diversity as such is no clear indicator for better results. On the contrary, information homogeneity can lead to subgroups in case the internal team diversity is at a medium level and the five main characteristics are not well balanced. This can even get worse through pro-similarity beliefs regarding working in groups. (Homan et. al., 2007)

Even if this paper has no direct connection to international diversity, it gives a fairly good general understanding of circumstances and processes influencing a team positively or negatively.

Furthermore, “Diversity Faultline” gives a new explanation, which was explored recently, providing better and new facts regarding the connection of international diversity and team performance, which is important for this research paper. Also, with respect to existing literature by (Lazear, 1999) described above, who defined the U-shaped curve as a non-linear function, the field experiment supported once more the claim that the costs within medium diverse teams are the highest, since also potential subgroups can hinder performance. In case of highly diverse teams, the creation of subgroups is very unlikely since these groups are too diverse.

3.5. The compositional impact of team diversity on performance: A Meta-analytic review -

Theoretical considerations & The Effects of team diversity on team outcomes

Now, we would like to shift the focus to two main papers by Sujin K. Horwitz. She is a professor at the St. Thomas University in Houston, Texas and has an enormous expertise in strategic human resources. In her papers, she researches about the influence of different kinds of diversity on team performance, explains fundamental terms of organizational dynamics and examines the connections to working environments of individuals and gives insights out of a strategic human resources perspective. (University of St. Thomas Houston, 2018)

Horwitz identified 5 main perspectives regarding diverse teams and team performance on tasks. These are group composition, task complexity, task interdependencies, organizational context and group process. Most of them were also discussed and defined as important variables in other papers described above. She also states that studies showed that job related attributes like education, industry background and expertise are more important for success than gender or multicultural diversity in groups. These are also called bio-demographic attributes. In this context it is also important to mention that the literature differentiates between effectiveness and efficiency. Effectiveness gives information about the quality of the solution which was created. Efficiency gives details whether the outcome was created in an economic and efficient manner or could have been developed faster and better. Efficiency is very important in terms of analysing internal group processes and examining differences between homogenous and highly diverse teams, which are supposed to need much more interactions and therefore longer than homogenous ones. Horwitz examined links and dependencies of the biodemographic attributes. She found out that the literature assumes that aged heterogeneous

groups received a lower performance grading. It is assumed that this is due to a lower social integration. (Horwitz, S.K., 2005)

Social integration means that every individual is well integrated and the team is working as one to maximize effectiveness and efficiency. However, studies have also shown that diversity can have a negative impact on performance and might lead to losses in effectiveness and a lower level of efficiency. This effect can derive from intragroup conflicts triggered by demographical differences of their members. (Horwitz, S. K. & Horwitz, I. B., 2007)

Another examined diversity characteristic of biodemographic attributes is gender diversity. It was observed that although mixed teams in terms of gender have the potential to deliver better results than groups of only women or men due to their wider knowledge spectrum and know-how, intragroup splitting might lead to lower performance deriving from substantial differences in communication and interaction styles, which in turn result in lower performance.

Ethnic diversity is a huge topic in the working environment today, since it can mean a substantial competitive advantage if it is managed well. For instance, it is beneficial to recruit local people in the country where your company operates. They have a knowledge advantage because of their cultural background and the higher diversity within the team might be beneficial as well. However, when we discuss working in teams it is very important not to forget about the different types of teams, which we will describe later. Horwitz found differing results. Some experiments showed a better team performance of multicultural diverse teams, while others revealed a lower performance than homogenous groups.

Besides the three biodemographic attributes there are also three job related ones. First of all, there is functional expertise which is highly related to the employees work and explains the degree of specialization and individual knowledge of a specific area like finance or marketing. A high diversity of this expertise attribute within a group is very positively correlated to team performance.

The second attributed is the educational background, meaning that a higher educational level of the whole team is positively related to team performance. A lower performance level due to problematic social integration was detected in case of differing educational levels within the team. The third job related attributed is organizational tenure meaning that the duration of an individual with the company has influence on the personal behaviour. It can be said that heterogenous teams with a

certain degree of organizational tenure are supporting strategic changes and a higher flexibility. Moreover, this also means that a group with different levels of organizational experience are adding additional value to the team. Basically, tenure diversity is positively correlated with performance. However, depending on the individuals within a group and their social capabilities, it can also lead to problematic social integration in case the team is too diverse. Nevertheless, literature offers no clear guidance concerning this question since outcomes are very different across the field studies, because it highly depends on the task which has to be completed. (Horwitz, S.K., 2005)

As mentioned above and as one of the theoretically based moderators, the team type perspective is essential in this context to get a clearer picture. In the literature you can find three main types of teams. First, working teams who are collaborating in their daily business. They should have the lowest degree of biodemographic diversity since they need the highest social integration to perform and communicate well. Second, there are project teams which are set up for a certain period of time to achieve a clearly defined goal. A highly diverse team can be very beneficial in this case, since a high level of creativity is often needed to maximize outcomes. Third, the management team, where it would also be beneficial if it is highly diverse, since it would then dispose over a broader knowledge area and better expertise.

Another aspect is related to team size, which is favourable for the outcome if it is a bigger group. However, important to mention is that decision making, coordination and social integration gets more complex when the team size increases. Therefore, marginal costs and benefits of an additional team member must be taken into consideration and compared thoroughly. At a certain head count, which is depending on the individual team, an upper limit can be identified, where costs become higher as the added value of an additional team member.

Task complexity, as previously mentioned, is highly important for field experiments. Higher complexity requires more diverse teams since they have a bigger knowledge area and expertise. Tasks with lower complexity, as well as routine tasks are ideal for homogenous teams.

Task interdependence, as the most important mediator between team diversity and performance, describes the coordination and communication between team members. Low interdependence tasks lead to less team integration, lower team communication and coordination and can result in inferior results. As described in “Bridging Faultlines by valuing diversity: Diversity beliefs, information

elaboration, and performance in diverse work groups” by (Homan, 2007), different information levels are prevalent in interdependence tasks and require more interactions than others. Highly interdependent tasks foster team communication and social integration and are therefore positively correlated to team performance, especially in diverse teams.

The last mediator is the frequency and duration of member interactions. It is strongly positive correlated to team performance and says that many interactions foster social integration and team building and trigger more and better communication and coordination. The more time people spend together, the more influence they have on thoughts and behaviour of others. They manage to prevent the building up of subgroups, misunderstandings and team imbalances and are hence very important for the success in teams. (Horwitz, S.K., 2005)

In the meta analytic data review no evidence was found for the theory that bio demographic diversity has a significant relationship with team performance. Also, no effect of team diversity on social integration was found. However, it became clear that task related diversity has a positive impact on team performance.

Horwitz found that paying attention to the links and dependencies within groups and organizations, combined with a basic understanding for group dynamics, can enhance organizational efficiency straightaway. (Horwitz, S. K. & Horwitz, I. B., 2007)

A lot of these insights should be transferred to human resource departments, who should introduce and present these topics to managers. This would in turn lead to a better performance across the project portfolio and could solve a number of problems within organizations. This paper was intended to bring additional fundamental knowledge to my literature review as well as explain terms and definitions of team processes, which are key for success within companies. What is more, it provides an overview about a wide range of variables and mediators influencing group dynamics, which are important to gain a better understanding for the results of the experiment. In the next part we try to focus on the context and relevance of this experiment and its potential implications for this research area.

4. Context and Relevance

Existing literature, field studies and papers from renown researchers around the globe showed that diversity is a modern topic, which gets constantly more important due to several factors. Organizations and their environment have developed in a way where group work is highly important for the success. Therefore, top management formed their teams in a way that made them capable of solving problems efficient and effectively. That often means to bring very diverse people from different cultures together and to cover the widest possible area of challenges for the organization. Nevertheless, as described above, managing highly diverse work groups is still a topic with unanswered questions, since results from the past are inconsistent and show diverse findings. Daan Van Knippenberg made substantial progress through his studies and experiments, combined with theoretical literature research. Further milestones and knowledge contributions in this area of research were achieved by Hamilton and Lazar, two other important researchers in organizational behaviour. However, Knippenberg introduced a few more question marks with the Categorization Elaboration Model, since it contains many more variables, interrelations and links, which have to be further examined in detail and need further scrutiny by more researches. This study builds on top of various existing papers, which should provide the reader with a good overview of many different aspects of this research subject. The empirical part will be characterized by a field experiment and analysed by making use of all possible examination questions derived from the latest literature. Objective of the experiment is to provide evidence whether culturally diverse teams are able to outperform homogenous and monocultural teams.

Furthermore, the thesis might provide a new basis for further research to build on top of it, to close more gaps and answer questions. Another aim of the paper is to create a whole picture and model to understand all interrelations and inconsistent findings in detail and to offer a proven management model for diverse work groups. However, this will be the aim of future research, since it cannot possibly be achieved through this paper due to limitations of this experiment.

In the next part we will give more context about the methodology, the content of the experiment and explain the data generation process. Moreover, there will be a description of the data preparation phase and the generated datasets from the experiment.

5. Method and Data

After the introduction to work group diversity and its effects on team performance described by Knippenberg and the Categorization Elaboration model, the second part consists of a literature review of already performed field studies, experiments and scientific papers.

In contrast to many other studies, which are analysing the link between diversity and team performance, the field experiment in this paper will try to find effects of diversity in work groups on the team performance.

The empirical part contains a field experiment with more than 50 students of the business strategy master class of strategic management at the University of Vienna. The students received a case study with the following task description.

5.1. Case Study

The WinterWhitey GmbH is an Austrian ski & snowboard manufacturer with more than 800 employees and one of the biggest ski / snowboard equipment producers in the world. With an annual revenue of 170 million euros in 2018 (2017: 160m) and an after tax profit of 3.5 million euros in 2018 (2017: 2.2m), WinterWhitey outgrows all other major competitors in Austria. Success factors that paid out nicely in the history of the company were highly rewarding strategic expansions and market entries into new countries. Another main reason for the huge success are very effective customized marketing campaigns in every single country. After market entries in the USA with Arnold Schwarzenegger as brand ambassador, Germany & Sweden with a huge digital marketing and very successful social media campaign (BeTheNextMarcel) and New Zealand by setting up a freeride & nature park area to fulfil the perfect skiing playground, the market screening 2018 figured out that Japan shows the biggest potential for the next planned expansion in 2019 by the WinterWhitey GmbH. With 126 million inhabitants, increasing economic prosperity and great geographical and climate conditions for skiing and snowboarding, Japan seems to be perfect for the upcoming planned market entry.

The task was to generate as many detailed ideas as possible for a proper marketing campaign in 2019 to make Japan the next success story for WinterWhitey GmbH. The group composition was completely random, without control of any diversity characteristics and resulted in twenty-five

groups of two people, three groups of three people and one team with only one member. Students had 30 minutes to interact, exchange and generate creative and innovative ideas. Since it was a problem statement with international cultural aspects related to Japan and Austria, it was also measured how much the answers were related to these countries. After the experiment, every participant had to fill out a personal questionnaire. Besides general data such as gender and age the form focused on cultural feedback of the students and their families. Moreover, language skills were assessed and the cultural knowledge these students possessed analysed to get an idea of their cultural profile. The field experiment was conducted during a regular master course class and no incentives were given to the students. The participation was anonymous and not graded.

The answers were analysed in three different categories. First, innovativeness of the answer, which was graded with a number between 1 to 7, with seven being the highest grade. The second indicator measured how practicable the generated ideas were, with the same range of grades. The last indicator measures whether the ideas are suitable for the countries in the task statement. In our example, we measured if the answers were individually adapted to Japan as the customer market or to Austria as the producer market. In case the answers were not related to any of these countries, the groups received zero points. In case the answers were appropriate, they were graded according to the system described above, also with a scale from 1 to 7. The individual points of all three categories were summed up to come up with the final result. All answers of the questionnaires and the points of all 29 groups were put into an excel sheet, which can be found below on the next upcoming pages.

This will be followed by the prepared data set which will later be used for the analysis. In the next chapter we will describe the experimental model and all existing limitations of the experiment and its information value.

Group ID	Total Points	Innovative (1-7)	Practical Useful (1-7)	Country related to Austria / Japan (No / Yes 1-7)
Group 2	9	3	2	4
Group 3	7	3	4	0
Group 4	6	3	3	0
Group 5	10	4	3	3
Group 6	6	3	3	0
Group 7	9	4	2	3
Group 8	5	2	1	2
Group 9	9	3	4	2
Group 15	6	3	2	1
Group 16	6	3	2	1
Group 18	4	2	2	0
Group 19	6	3	3	0
Group 20	7	2	3	2
Group 21	6	2	3	1
Group 22	8	4	4	0
Group 23	7	3	3	1
Group 24	12	4	4	4
Group 25	8	2	2	4
Group 27	7	3	3	1
Group 29	7	3	3	1

Table 1: Achieved points per group

Group ID	Group member 1														
	Gender	Age	Place of birth	Nationality	Nationality mother	Nationality father	Mother Language	Language 2	Language 3	Language 4	Country lived 1	Country lived 2	Country lived 3	Country lived 4	Other cultural knowledge
Group 2	Male	24	Germany	Germany	Germany	Germany	German	English	French		Austria	Germany	France		
Group 3	Female	24	Austria	Austria	Austria	Armenia	German	English	French		Austria	Germany	France		
Group 4	Female	26	Taiwan	Taiwan	Taiwan	Taiwan	Chinese	English	German		Austria	Ireland	UK	Taiwan	
Group 5	Male	32	Austria	Austria	Austria	Austria	German	English			Austria				
Group 6	Male	25	Germany	Germany	Germany	Germany	German	English			Austria	Germany	UAE		
Group 7	Female	25	Japan	Germany	Germany	Germany	German	English			Germany	Australia	UAE	Japan	
Group 8	Female	23	Belarus	Belarus	Belarus	Belarus	Russian	English	German		Austria	Germany	Belarus		
Group 9	Male	28	Albania	Albania	Albania	Albania	German	English	Italian		Austria	Albania			
Group 15	Female	25	Austria	Austria	Austria	Austria	German	English			Austria				
Group 16	Male	24	Germany	German / UK	Germany	British	German / English				Austria	Germany	UK		
Group 18	Female	24	Austria	Austria	Austria	Austria	German	English	Spanish		Austria	Spain			
Group 19	Female	25	Germany	Germany	Germany	Germany	German	English			Austria	Germany	France		
Group 20	Female	26	Bulgaria	Bulgaria	Bulgaria	Bulgaria	German	English	Bulgarian		Austria	Bulgaria			
Group 21	Female	25	Germany	Germany / Bulgaria	Germany	Bulgaria	German / Bulgarian	English	French		Austria	Germany			
Group 22	Female	24	Ukraine	Ukraine	Ukraine	Ukraine	Ukrainian	English	Russian	German	Austria	USA	Ukraine		
Group 23	Male	26	Austria	Austria	Austria	Austria	German	English	Swedish		Austria				Sweden
Group 24	Male	25	Germany	German	German	German	German	English			Austria	Germany			Japan
Group 25	Male	25	Hungary	Hungary	Hungary	Hungary	Hungarian	English	German		Austria	Hungary			
Group 27	Female	23	Germany	Germany	Germany	Germany	German	English	Spanish		Austria	Germany	Spain		
Group 29	Female	22	Austria	Austria	Austria	Austria	German	English			Austria				

Table 2: Personal data group members 1

Group ID	Group member 2															
	Gender	Age	Place of birth	Nationality	Nationality mother	Nationality father	Mother Language	Language 2	Language 3	Language 4	Country lived 1	Country lived 2	Country lived 3	Country lived 4	Country lived 5	Other cultural knowledge
Group 2	Female	25	Croatia	Austria	Bosnia	Bosnia	German / Bosnian	English	French		Bosnia	Croatia	Germany	Austria		France
Group 3	Male	23	Germany	Germany	Germany	Germany	German	English			Austria	Germany	UK			
Group 4	Female	23	Romania	Romania	Romania	Romania	Romanian	English	French	German	Austria	Romania				
Group 5																
Group 6	Female	25	Italy	Italy	Italy	Italy	Italian	English	German	French	Austria	UAE	Italy			
Group 7	Female	23	Austria	Austria	Austria	Austria	German	English	Spanish		Austria	Spain				
Group 8	Female	23	Poland	Poland	Poland	Poland	Polish	English	Spanish		Austria	Spain	Poland			
Group 9	Female	35	Kasachstan	Germany	German / Russian	German / Russian	German / Russian				Germany	Kasachstan				
Group 15	Female	24	Austria	Austria	Austria	Austria	German	English			Austria	Canada				
Group 16	Male	25	Austria	Austria	Austria	Austria	German	English			Austria					
Group 18	Female	27	Montenegro	Montenegro	Montenegro	Montenegro	German	English	Spanish	Italian	Austria	Montenegro				
Group 19	Female	25	Germany	Germany	Germany	Germany	German				Austria	Germany				
Group 20	Female	24	Slovakia	Slovakia	Slovakia	Slovakia	Slovak	Spanish	German		Austria	Germany	CZ	Spain	Slovakia	
Group 21	Female	25	Ukraine	Ukraine	Ukraine / Russian	Ukraine	Russian / Ukrainian	English			Austria	Israel	Ukraine	USA	Bahamas	
Group 22	Female	26	Austria	Austria	Austria	Austria	German	English	Italian		Austria	Switzerland	USA			
Group 23	Male	25	USA	USA	USA	USA	English	German			Austria	USA				
Group 24	Male	27	Germany	Germany	Germany	Germany	German	English			Germany	USA	Austria			
Group 25	Male	25	Hungary	Hungary	Hungary	Hungary	Hungarian	English	German		Austria	Hungary				
Group 27	Male	35	Austria	Austria	Austria	Austria	German	English	Spanish		Austria					USA / Columbia
Group 29	Male	27	Germany	Germany	Germany	Germany	German	English	French		Austria	Germany	USA	Australia		

Table 3: Personal data group members 2

Group ID	Group member 3														
	Gender	Age	Place of birth	Nationality	Nationality mother	Nationality father	Mother Language	Language 2	Language 3	Language 4	Country lived 1	Country lived 2	Country lived 3	Country lived 4	Other cultural knowledge
Group 2															
Group 3															
Group 4															
Group 5															
Group 6															
Group 7															
Group 8															
Group 9															
Group 15															
Group 16															
Group 18	Female	27	Pakistan	Pakistan	Pakistan	Pakistan	Urdu	English	German	Hindi	Austria	Germany	Pakistan	UK / Netherland	
Group 19	Female	23	Germany	Germany	Germany	Germany	German	English			Austria	Germany	UK		Italy
Group 20															
Group 21															
Group 22															
Group 23	Female	28	Colombia	Colombia	Colombia	Colombia	Spanish	English	German	Portuguese	Austria	Columbia			
Group 24															
Group 25															
Group 27															
Group 29															

Table 4: Personal data group members 3

Group ID	Total Points	Innovativeness	Practical Useful	Country related to Austria / Japan	Group includes Austria or Japan nationality	Number of cultural knowledge related to own and parents nationality	Number of overall cultural knowledge (nationality + lived + Others)	Number of group members	Average Age per group member	Gender Diversity	Mother language Diversity	Number of different Languages per group
Group 2	9	3	2	4	YES	3	5	2	24,50	YES	NO	4
Group 3	7	3	4	0	YES	3	5	2	23,50	YES	NO	3
Group 4	6	3	3	0	NO	2	4	2	24,50	NO	YES	5
Group 5	10	4	3	3	YES	1	1	1	32,00	NO	NO	2
Group 6	6	3	3	0	NO	3	4	2	25,00	YES	YES	4
Group 7	9	4	2	3	YES	2	6	2	24,00	NO	NO	3
Group 8	5	2	1	2	NO	2	3	2	23,00	NO	YES	5
Group 9	9	3	4	2	NO	3	4	2	31,50	YES	NO	4
Group 15	6	3	2	1	YES	1	2	2	24,50	NO	NO	2
Group 16	6	3	2	1	YES	3	3	2	24,50	NO	NO	2
Group 18	4	2	2	0	YES	3	7	3	26,00	NO	YES	6
Group 19	6	3	3	0	NO	1	4	3	24,33	NO	NO	2
Group 20	7	2	3	2	NO	2	5	2	25,00	NO	YES	5
Group 21	6	2	3	1	NO	4	7	2	25,00	NO	YES	6
Group 22	8	4	4	0	YES	2	4	2	25,00	NO	YES	5
Group 23	7	3	3	1	YES	3	4	3	26,33	YES	YES	5
Group 24	12	4	4	4	NO	1	3	2	26,00	NO	NO	2
Group 25	8	2	2	4	NO	1	1	2	25,00	NO	NO	3
Group 27	7	3	3	1	YES	2	5	2	29,00	YES	NO	3
Group 29	7	3	3	1	YES	2	4	2	24,50	YES	NO	3

Table 5: Prepared data set for Stata input

5.2. Experimental design

As previously mentioned, field studies for organizational behaviour of diverse work groups are very complex and include several variables and mediators. Some can be controlled in a perfect world scenario, but not in the real world. Daan Van Knippenberg in his Categorization Elaboration Model enabled the examination of interrelations on a deep level. In this section, we would like to describe the variables from our model as well as the experimental variables and influencing factors in more detail.

Dependent Variable: Total Achieved Points = *Sum of achieved points for generated ideas in the categories innovativeness, practicability and cultural reference to the task*

We chose “Total Achieved Points” as our dependent variable because it gives us the opportunity to compare the performance and the outcome of groups objectively. It is the cumulative result of all three categories and scores the generated ideas according to the system described above. Innovativeness gives information about the degree of novelty of the idea. According to Joseph Alois Schumpeter, innovation is the deliberate and targeted process of change towards something new or at least renewed, to use it in a novel form. (Borbély, E., 2008) However, this criteria has only limited significance in terms of usefulness. Therefore, we chose practicability as the second category which grades the idea according to its feasibility and usefulness in practice. The international problem statement in this case study is related to the characteristics of the Japanese customer market as well as to Austria as a manufacturing country and the properties and qualities as an exporting country. Generally speaking, it is easier to find ideas and solutions for a general topic than for a detailed and customized question. Therefore, we decided to add a variable which measures the applicability of the ideas and solutions to Austria as the exporting country and Japan as the customer market. The framework we created with our dependent variable achieved to generate new ideas, which are in practice applicable and adapted to the specific requirements of Austrian and Japan.

Cultural team diversity was selected as the main independent variable. It consists of the place of birth and nationality of group members as well as the nationality of their relatives. Moreover, it includes language skills, meaning minimal fluency, and cultural knowledge participants acquired during a

stay abroad, which lasted for at least half a year. In addition, participants had the chance to add additional cultural knowledge they have acquired throughout their lives. Age and gender as minor explorative independent variables add the possibility to analyze whether these two factors have significant influence on the overall outcome.

First, we have to admit that this field experiment also has its limitations concerning the relevance of the outcome. But the experiment still has the advantage that many uncontrollable variables with interrelations to other variables are not part of the study and could be discarded. One reason was the small timeframe of 30 minutes for the experiment. Thus, it was not possible to monitor group dynamics over a longer time span to identify potential changes in the integration and exchange processes. Another factor was that no observation of the groups during the experiment was possible. This depicts a severe limitation in regard to the surveillance of the information elaboration processes within the groups as well as possible social categorization aspects. As a consequence, no relevant statement can be made towards group communication processes and the effect of elicitation versus elaboration. Moreover, no answers were required regarding the interest and knowledge on winter sports in general. Also, there were no specific questions about skiing, snowboarding as well as about the professions of the participants. Following from that, the question remains unanswered whether knowledge about skiing / snowboarding, experience of working within (international) work groups or knowledge about marketing and sales would have influence the overall performance of the generated ideas. Lastly, due to the small group sizes there was no possibility to form subgroups. Moreover, due to the time restriction, the chance to categorise individuals into inner and outer circles was heavily limited.

These deliberate restrictions were made due to the scope and size of this paper. In addition, it was important regarding the statistical relevance and confidence level of the main independent variable. Many interrelations described previously were therefore eliminated in a controlled manner. The simplification should bring clarity regarding the inconsistent findings of several papers in the past. The next chapter includes the hypothesis, which we defined through existing literature and conducted experiments in the past.

6. Hypotheses

Based on the explanations, existing literature and our own research above, we propose to test the following hypothesis:

- Hypothesis 1: Culturally heterogeneous / diverse teams, which are teams with more or stronger cultural knowledge / background, outperform more homogenous groups with less diverse cultural knowledge / background. This would mean that international diversity and better cultural knowledge in work groups is positively correlated with the overall outcome and performance of teams.
 - Hypothesis 1a: Internationally diverse teams achieve more points in the category “Innovativeness” than homogenous teams.
 - Hypothesis 1b: Internationally diverse teams achieve more points in the category “Practicability” than homogenous teams.
 - Hypothesis 1c: Internationally diverse teams achieve more points in the category “Innovativeness”, Country related to Austria and Japan.
- Hypothesis 2: Teams with Austrian or Japanese group members achieve more points than teams without specific nationalities within the work group in the category “Country related ideas to Austria and Japan”. Their personal background is supposed to give them an advantage over others. Therefore, Austrian or Japanese nationality of group members is positively correlated with the outcome and performance in the category “Country related ideas to Austria and Japan”.
- Hypothesis 3: Teams with a common mother language outperform teams with different mother languages. Even if the level of the common language is sufficient, we suppose that a common mother tongue is positively correlated with the performance of teams, since it supports the information elaboration process and avoids biases and subgroups.

7. Analysis

The following chapter will mainly contain the analysis of the field experiment and its generated data set. The analysis was mostly performed with Stata. The prepared dataset, which can be seen in table 5 above, was the basis for the analysis phase. The Excel documentation of the results in table 1- 4 depicts the documentation of the case study and personal questionnaires. The documentation had to be formatted for a proper analysis in an adequate style, using numbers instead of strings. In addition to the four performance parameters (Total Points, Innovativeness, Practicability and points for generated ideas relating to the problem statement of Austria and Japan), also independent variables had to be transferred from the questionnaire documentation to the numbered basis dataset. These are the accumulated numbers of different nationalities in a group and the average per team member, since groups contain either one, two or three people. The same calculation was performed for overall heterogeneity of cultural knowledge and background, including nationalities, countries lived in and other specific knowledge. As a last indicator of heterogeneity in the knowledge spectrum sizing, we analyzed whether the number of languages or the average number of different languages per team member influences creativity, innovativeness or practicability. Moreover, variables were prepared in a way so that the effect of gender and mother language diversity within groups could be examined. Moreover, we also examined if group size or age influences one of the three performance categories or even the overall Total points achieved.

After these steps, table 5 was imported as a basic dataset into Stata version 15.1. Twenty groups were involved in the experiment resulting in 20 values and observations per variable, in terms of data size. Since the scale was between 0-7 for all 3 performance categories, the maximum possible scoring per group in the category Total points is 21. Different methods were used to generate an analysis which is as accurate as possible. First, a rough summary gives an overview about the mean, standard deviation and minimum as well as the maximum of the observation series. This is followed by a deeper analysis with T-Tests, regression analysis and Anova studies. The interrelations between variables and indicators were investigated with correlation commands. In the early stages of the analysis phase it became clear that the low number of participants and the number of twenty groups will have negative effects on the significance of the study. This is no clear limitation in the experiment but puts us in a more difficult situation to derive statistically significant results.

Especially the high number of variables in the model influencing the results depicted a major challenge.

In figure 3 below you can find the statistical overview for all 4-performance indicators including the number of observations, mean, standard deviation as well as the minimum and maximum values of the outcome variables. With a mean of 2.95, 2.8 and 1.5 points for the individual indicators represent the lower end of the range.

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	20	7.25	1.860249	4	12
Innovative~s	20	2.95	.6863327	2	4
PracticalU~l	20	2.8	.8335088	1	4
PointsCoun~d	20	1.5	1.432701	0	4

Figure 3: Statistical overview of all 4-performance variables

A standard deviation of about 25% of the mean is rather high compared to other studies. What is more, group performance differs extremely, since the minimum value was 4 points and the maximum 12. With the maximum being 21 points, the highest score of 12 is comparably low. According to the results, groups generated more innovative ideas than practically useful and country related ones. This means that groups, independent of any personal characteristics, focused more on generating marketing ideas rather than on practical ideas as requested in the case study. Reasons for that could be the 30-minute time limit or the difficulty of creating individual answers. A more reasonable answer could be that groups had a lack of information about Japan and/or Austria. In another analysis, sorting the groups into Japanese and Austrian nationalities the overall performance showed the following picture.

```
. sort GroupInclNatAtJap
```

```
. by GroupInclNatAtJap : summarize TotalPoints Innovativeness PracticalUseful PointsCountryrelated
```

```
-> GroupInclNatAtJap = NO
```

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	9	7.222222	2.166667	5	12
Innovative~s	9	2.666667	.7071068	2	4
PracticalU~l	9	2.888889	.9279607	1	4
PointsCoun~d	9	1.666667	1.581139	0	4

```
-> GroupInclNatAtJap = YES
```

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	11	7.272727	1.678744	4	10
Innovative~s	11	3.181818	.6030227	2	4
PracticalU~l	11	2.727273	.7862454	2	4
PointsCoun~d	11	1.363636	1.361817	0	4

Figure 4: Performance of groups sorted by Austria XOR Japan nationality

What can be said with respect to the group sorting and splitting method described above is that the mean of groups with no nationality relations to Austria or Japan is with 1.67 points higher than the mean of groups with a nationality relation to Austria or Japan with 1.36. Additionally, groups without any relation or background to at least one of these countries achieved a higher maximum score of 12 points in the category “points country related to Austria or Japan”, as compared to others with a maximum of 10. This happened in spite of the fact that eleven groups had no team member from Austria or Japan, against nine with a relation to either of the two countries. The T-Test showed that the only positive effect of country knowledge effected ideas in the category Innovativeness. They achieved half a point more on average than groups without Austrian or Japanese nationalities. The most important part of the analysis deals with the question whether the cultural heterogeneity within a team and the national diversity of a group has an impact on the outcome of at least one performance indicator as well as on the overall outcome. In a first step, we will investigate if the nationality of group members including the nationality of their parents has an impact on a performance variable and the overall outcome. We saw previously that the number of nationalities per team varies between one and four. The distribution of all twenty groups showed that five groups were 100% homogenous, meaning they all had the same nationality. Additionally, seven groups were a bit more diverse and had two different nationalities. Moreover, seven groups were composed of 3 different nationalities.

Just one team consisted of 4 different nationalities. With a score of 6, the most diverse group according to nationalities achieved the lowest number in total points. Only in the section of practical usefulness, this group achieved the highest score on average. The findings revealed that the achieved points in all categories declined with an increasing number of nationalities and higher diversity. The highest points on average across categories were achieved by groups with only one nationality. What is more, the same trend can be observed when looking at the maximum points of all groups.

```
. sort CulturalknowledgeNat
```

```
. by CulturalknowledgeNat : summarize TotalPoints Innovativeness PracticalUseful PointsCountryrelated
```

-> CulturalknowledgeNat = 1

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	5	8.4	2.607681	6	12
Innovative~s	5	3.2	.83666	2	4
PracticalU~l	5	2.8	.83666	2	4
PointsCoun~d	5	2.4	1.81659	0	4

-> CulturalknowledgeNat = 2

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	7	7	1.290994	5	9
Innovative~s	7	3	.8164966	2	4
PracticalU~l	7	2.714286	.9511897	1	4
PointsCoun~d	7	1.285714	1.112697	0	3

-> CulturalknowledgeNat = 3

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	7	6.857143	1.772811	4	9
Innovative~s	7	2.857143	.3779645	2	3
PracticalU~l	7	2.857143	.8997354	2	4
PointsCoun~d	7	1.142857	1.46385	0	4

-> CulturalknowledgeNat = 4

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	1	6	.	6	6
Innovative~s	1	2	.	2	2
PracticalU~l	1	3	.	3	3
PointsCoun~d	1	1	.	1	1

Figure 5: Results of all 4-performance categories based on the number of nationalities

In figure 6 and 7 below the same analysis was performed for cultural knowledge, including countries the participants lived in, as well as other specific cultural knowledge factors in addition to the number of nationalities mentioned above. A total number of seven groups have knowledge about four different countries, followed by four groups with five and three groups with 3 different cultural backgrounds. The analysis showed that the normal distribution is very straight and the level of skewness is rather low. A group with knowledge about three different cultures achieved the highest number of points. Nevertheless, two groups with knowledge about only one culture achieved the highest average in regards to total points. In both analyses, very homogenous groups outperformed heterogenic groups. Since results were derived from the analysis of performance variables compared to cultural knowledge and the number of nationalities, the number of group members was not included. For a proper analysis, an average of the nationalities per group member as well as an average of the cultural knowledge per group member was calculated. However, these numbers showed the same results and order as previously, without taking the group size into account.


```

. sort CulturalknowledgeOverall

. by CulturalknowledgeOverall : summarize TotalPoints Innovativeness PracticalUseful PointsCountryrel
> ated

```

-> CulturalknowledgeOverall = 1

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	2	9	1.414214	8	10
Innovative~s	2	3	1.414214	2	4
PracticalU~l	2	2.5	.7071068	2	3
PointsCoun~d	2	3.5	.7071068	3	4

-> CulturalknowledgeOverall = 2

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	1	6	.	6	6
Innovative~s	1	3	.	3	3
PracticalU~l	1	2	.	2	2
PointsCoun~d	1	1	.	1	1

-> CulturalknowledgeOverall = 3

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	3	7.666667	3.785939	5	12
Innovative~s	3	3	1	2	4
PracticalU~l	3	2.333333	1.527525	1	4
PointsCoun~d	3	2.333333	1.527525	1	4

-> CulturalknowledgeOverall = 4

Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	7	7	1.154701	6	9
Innovative~s	7	3.142857	.3779645	3	4
PracticalU~l	7	3.285714	.48795	3	4
PointsCoun~d	7	.5714286	.7867958	0	2

Figure 6: Part 1 - Analysis of achieved points sorted by overall cultural knowledge

After the analysis, it was not possible to exclude the assumption that group size is not relevant for the performance of teams. Therefore, we investigated the distribution of team members over all twenty groups. This showed that one group consisted of only one member. A total of sixteen groups had two members and three groups had three. Following from that it became clear that the experiment suffers since we have one group consisting of only one person. What is more, this “group” achieved the second highest score, resulting in a decreasing significance of the whole study. However, this was also due to the low number of participating groups in the field experiment. Nevertheless, our analysis showed that when looking at the number of group members and our four performance

indicators that smaller groups achieve a better outcome. This became clear across all different categories, even when we decreased the weight of the one person group.

-> CulturalknowledgeOverall = 5					
Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	4	7.5	1	7	9
Innovative~s	4	2.75	.5	2	3
PracticalU~1	4	3	.8164966	2	4
PointsCoun~d	4	1.75	1.707825	0	4
-> CulturalknowledgeOverall = 6					
Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	1	9	.	9	9
Innovative~s	1	4	.	4	4
PracticalU~1	1	2	.	2	2
PointsCoun~d	1	3	.	3	3
-> CulturalknowledgeOverall = 7					
Variable	Obs	Mean	Std. Dev.	Min	Max
TotalPoints	2	5	1.414214	4	6
Innovative~s	2	2	0	2	2
PracticalU~1	2	2.5	.7071068	2	3
PointsCoun~d	2	.5	.7071068	0	1

Figure 7: Part 2 - Analysis of achieved points sorted by overall cultural knowledge

In the personal questionnaire, we asked for the gender and age of the participants. During the next analysis, we investigated whether there was any effect of these variables. Participants were between 23 and 32 years old, with a mean of 25. It turned out that there is no significant effect of age on one of the performance indicators or on the overall total outcome. However, we can see a trend that increasing age is positively correlated with work group performance. We could observe a much clearer effect of gender diversity on the results. As mentioned above during the introduction and the literature review, gender diversity in work groups has always been one of the starting points for such studies.

Cultural diversity has developed over a long time span into the current stadium. Thirteen groups during our study were identified as homogenous and had no gender diversity. Seven groups in the end were gender diverse. It could be observed that diverse teams achieved a higher performance on

average compared to gender homogenous groups. However, due to a substantial standard deviation only the category Innovativeness, where diverse teams also outperformed homogenous groups, showed a statistically significant result. This was also proven by the T-Test for all performance variables examining the effects of gender diversity. Another significant finding was detected during the examination of diversity regarding the mother language within teams. Three categories showed a statistically significant result that homogenous groups in terms of language outperformed diverse teams. Only the practical usefulness indicator showed no statistical evidence in the T-test. Even when the results in homogenous language groups were higher than in others. The twelve groups with same mother language achieved much better results than the remaining eight diverse groups. What also needs to be said is that groups had different language skills. It varied between two languages and up to six. Again, people without speaking many different languages, achieved better results than others. The increasing number of languages spoken within a group showed a trend towards the generation of lower quality ideas and in return a lower overall performance. However, also this difference was not clear enough to support a statistical evidence.

The table below shows the 75% binomial distribution including a 95% confidence interval, tested for all four performance variables used in the analysis above.

Variable	Obs	Percentile	Centile	— Binom. Interp. — [95% Conf. Interval]	
TotalPoints	20	75	8.75	7	9.989733
Innovative~s	20	75	3	3	4
PracticalU~l	20	75	3	3	4
PointsCoun~d	20	75	2.75	1	4

Figure 8: Binomial distribution of the performance variables

The subsequent part of the analysis is about the relationship of different variables between each other. The correlation analysis always shows a number between -1 and 1. Minus one would mean a negative relation between the variables whereas zero shows no relationship at all. Plus 1 depicts a strongly positive correlation between the variables. This would mean that in case variable X increases also the second variable Y would increase. The first analysis assessed the effect of different independent variables on the Total Points. The result was that cultural knowledge, the number of group members

and language skills are negatively related with the overall performance. This means that less cultural knowledge, fewer group members and different language skills lead to a better outcome and higher performance. Only a higher average age leads to a better outcome than compared to a lower one. During the second investigation, innovativeness as an equal part of the Total Points was reviewed in detail through a correlation study. However, it showed the same tendencies as the first analysis. The only difference was the strength of the correlation. In comparison to the Total Points analysis, the correlation was 0.1-0.2 lower on average with a mean of -0.3. The Total points correlation with the independent variable showed a -0.5 correlation with the other variables. The third dependent variable Practical Usefulness was identified to have no significant relationship with the other variables. With an average correlation above -0.1 and below 0.1 no significant correlation could be proven, except the correlation of 0.37 to the average group age. This means that older groups on average are more able to come up with more practical ideas. The last dependent variable, points for country specific ideas, showed the same picture as the primary variable, Total points.

In a two-way Anova analysis we tried to get more depth in the explanations and the influence of cultural factors and variables on our 4 dependent variables. However, all attempts to get a detailed perspective of our results, which is also statistically significant failed due to very high p-values and overwhelming F-statistics. As the last main indicator, we set up regression models to perform further analyses on the model explaining the results of our field study. Once more, we wanted to generate significant explanations and ideas of the interrelations of our defined independent variables on the performance of our work groups. Furthermore, we wanted to see a statistically significant influence of factors affecting the overall outcome of the generated ideas and answers on the case study. Therefore, we continued with models showing a significance level below 0.1 for the p-value. Given our previous results from the performed examinations, we assumed that only a few models would be within these limits. In the first part, we investigated the influence of cultural knowledge since this was our main objective in this experiment. Later on, we focused on the other moderating variables and their importance on the model. The whole analysis as well as the upcoming regression models were conducted with Stata.

. regress TotalPoints CulturalknowledgeNat

Source	SS	df	MS	Number of obs	=	20
Model	7.96052632	1	7.96052632	F(1, 18)	=	2.48
Residual	57.7894737	18	3.21052632	Prob > F	=	0.1328
				R-squared	=	0.1211
				Adj R-squared	=	0.0722
				Root MSE	=	1.7918
Total	65.75	19	3.46052632			

TotalPoints	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CulturalknowledgeNat	-.7236842	.4595855	-1.57	0.133	-1.689238	.2418691
_cons	8.842105	1.087578	8.13	0.000	6.557189	11.12702

. regress TotalPoints CulturalknowledgeOverall

Source	SS	df	MS	Number of obs	=	20
Model	6.53704612	1	6.53704612	F(1, 18)	=	1.99
Residual	59.2129539	18	3.28960855	Prob > F	=	0.1757
				R-squared	=	0.0994
				Adj R-squared	=	0.0494
				Root MSE	=	1.8137
Total	65.75	19	3.46052632			

TotalPoints	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CulturalknowledgeOverall	-.3581943	.2540973	-1.41	0.176	-.8920329	.1756443
_cons	8.700687	1.106126	7.87	0.000	6.376802	11.02457

Figure 9: Regression of Total Points to the Cultural Knowledge

. regress Innovativeness CulturalknowledgeNat

Source	SS	df	MS	Number of obs	=	20
Model	.95	1	.95	F(1, 18)	=	2.14
Residual	8	18	.444444444	Prob > F	=	0.1610
				R-squared	=	0.1061
				Adj R-squared	=	0.0565
				Root MSE	=	.66667
Total	8.95	19	.471052632			

Innovativeness	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CulturalknowledgeNat	-.25	.1709964	-1.46	0.161	-.6092501	.1092501
_cons	3.5	.4046513	8.65	0.000	2.649859	4.350141

. regress Innovativeness CulturalknowledgeOverall

Source	SS	df	MS	Number of obs	=	20
Model	.480912659	1	.480912659	F(1, 18)	=	1.02
Residual	8.46908734	18	.470504852	Prob > F	=	0.3254
				R-squared	=	0.0537
				Adj R-squared	=	0.0012
				Root MSE	=	.68593
Total	8.95	19	.471052632			

Innovativeness	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CulturalknowledgeOverall	-.0971541	.096097	-1.01	0.325	-.2990464	.1047383
_cons	3.343474	.4183257	7.99	0.000	2.464604	4.222344

Figure 10: Regression of Innovativeness to the Cultural Knowledge

. regress PracticalUseful CulturalknowledgeNat

Source	SS	df	MS	Number of obs	=	20
Model	.042105263	1	.042105263	F(1, 18)	=	0.06
Residual	13.1578947	18	.730994152	Prob > F	=	0.8130
				R-squared	=	0.0032
				Adj R-squared	=	-0.0522
Total	13.2	19	.694736842	Root MSE	=	.85498

PracticalUseful	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CulturalknowledgeNat	.0526316	.2192982	0.24	0.813	-.4080969	.5133601
_cons	2.684211	.5189544	5.17	0.000	1.593928	3.774493

. regress PracticalUseful CulturalknowledgeOverall

Source	SS	df	MS	Number of obs	=	20
Model	.094995093	1	.094995093	F(1, 18)	=	0.13
Residual	13.1050049	18	.728055828	Prob > F	=	0.7221
				R-squared	=	0.0072
				Adj R-squared	=	-0.0480
Total	13.2	19	.694736842	Root MSE	=	.85326

PracticalUseful	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CulturalknowledgeOverall	.0431796	.1195392	0.36	0.722	-.2079629	.2943221
_cons	2.625123	.5203731	5.04	0.000	1.531859	3.718386

Figure 11: Regression of Practical Usefulness to the Cultural Knowledge

regress PointsCountryrelated CulturalknowledgeNat

Source	SS	df	MS	Number of obs	=	20
Model	4.21052632	1	4.21052632	F(1, 18)	=	2.18
Residual	34.7894737	18	1.93274854	Prob > F	=	0.1572
				R-squared	=	0.1080
				Adj R-squared	=	0.0584
Total	39	19	2.05263158	Root MSE	=	1.3902

PointsCountryrelated	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CulturalknowledgeNat	-.5263158	.3565873	-1.48	0.157	-1.275478	.2228463
_cons	2.657895	.8438396	3.15	0.006	.8850535	4.430736

regress PointsCountryrelated CulturalknowledgeOverall

Source	SS	df	MS	Number of obs	=	20
Model	4.71540726	1	4.71540726	F(1, 18)	=	2.48
Residual	34.2845927	18	1.9046996	Prob > F	=	0.1330
				R-squared	=	0.1209
				Adj R-squared	=	0.0721
Total	39	19	2.05263158	Root MSE	=	1.3801

PointsCountryrelated	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CulturalknowledgeOverall	-.3042198	.1933487	-1.57	0.133	-.7104303	.1019906
_cons	2.73209	.8416776	3.25	0.004	.9637913	4.500389

Figure 12: Regression of Country related points to the Cultural Knowledge

Figures 8 to 12 above show the first and main part of our study, where we investigate the relationship between cultural knowledge and work group performance. Moreover, since previous analyses never showed statistically significant results, we looked for evidence to support our hypothesis. As mentioned above, it could also be seen in the regression models that three out of four performance variables are negatively correlated with the independent variables. Only the practicability of generated ideas is neither negatively nor positively correlated with the Cultural knowledge of participants. Looking at the F-Test and related p-values, all regression models described above were not statistically significant and did not provide enough evidence for or against our hypothesis. The distribution of our results in the first part was too high to gather reliable data in this area. Nevertheless, it can be said that the analysis consisting of several different tests lead to the result that higher cultural knowledge, including different nationalities as a first criteria and all other factors, including additionally countries lived in, did not lead to a higher outcome and performance in the area of Innovativeness and country related knowledge to Japan and Austria. However, a positive relation could be derived from the practicability in relation to the cultural knowledge regarding nationalities and overall. This could also be statistically verified and demonstrated by our tests. In the next part, we tried to generate more statistical evidence of the influence of the average age of the work groups on our performance indicators. This variable is very interesting since in the previous analysis it was one of the few variables showing a strong relationship with our dependent variables with a low scattering. With a p-value of 0.066 the positive correlation between the average age and Total generated points could be statistically verified. Nevertheless, looking at the single variables we can see that only the indicator of practical usefulness illustrated a significant result. Thus, the positive correlation between the performance indicator and the average age of work groups could only partially be proven by our analysis as well as by the regression model.

Two further indicators mentioned above were language skills as well as the number of group members. Regarding the language skills of team members, all four dependent variables showed a strong negative relationship, which can also be partly seen in figure 13 and 14 through the regression models of Total points and Innovativeness. Even when the regression models only provided partial certainty about the data, tables 1-3 also supported additional trends and significance for the relationship between variables.

. regress TotalPoints NumOfDiffLang

Source	SS	df	MS	Number of obs	=	20
Model	12.769337	1	12.769337	F(1, 18)	=	4.34
Residual	52.980663	18	2.94337017	Prob > F	=	0.0518
				R-squared	=	0.1942
				Adj R-squared	=	0.1494
Total	65.75	19	3.46052632	Root MSE	=	1.7156

TotalPoints	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
NumOfDiffLang	-.5939227	.2851466	-2.08	0.052	-1.192993	.0051481
_cons	9.447514	1.122623	8.42	0.000	7.08897	11.80606

. regress Innovativeness NumOfDiffLang

Source	SS	df	MS	Number of obs	=	20
Model	2.38922652	1	2.38922652	F(1, 18)	=	6.56
Residual	6.56077348	18	.364487416	Prob > F	=	0.0197
				R-squared	=	0.2670
				Adj R-squared	=	0.2262
Total	8.95	19	.471052632	Root MSE	=	.60373

Innovativeness	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
NumOfDiffLang	-.2569061	.100343	-2.56	0.020	-.4677189	-.0460933
_cons	3.900552	.3950507	9.87	0.000	3.070582	4.730523

. regress PracticalUseful NumOfDiffLang

Source	SS	df	MS	Number of obs	=	20
Model	.039779006	1	.039779006	F(1, 18)	=	0.05
Residual	13.160221	18	.731123389	Prob > F	=	0.8182
				R-squared	=	0.0030
				Adj R-squared	=	-0.0524
Total	13.2	19	.694736842	Root MSE	=	.85506

PracticalUseful	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
NumOfDiffLang	-.0331492	.1421154	-0.23	0.818	-.3317225	.2654241
_cons	2.922652	.5595088	5.22	0.000	1.747168	4.098136

Figure 13: Regression of performance indicator and number of language skills

. regress PointsCountryrelated NumOfDiffLang						
Source	SS	df	MS	Number of obs	=	20
Model	3.34254144	1	3.34254144	F(1, 18)	=	1.69
Residual	35.6574586	18	1.98096992	Prob > F	=	0.2103
				R-squared	=	0.0857
				Adj R-squared	=	0.0349
Total	39	19	2.05263158	Root MSE	=	1.4075
PointsCount~d	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
NumOfDiffLang	-.3038674	.2339293	-1.30	0.210	-.7953347	.1875999
_cons	2.624309	.9209806	2.85	0.011	.6894009	4.559218

Figure 14: Regression of country related performance indicator and number of language skills

Through the last variable, we wanted to find evidence for the group size affecting the overall performance. There were several reasons why this variable was highly important for the whole analysis and for results derived from many other analyses mentioned above. The whole CEM model including categorization and elaboration processes depends on interactions between individuals within a work group. Therefore, main factors are the group size and integrated processes as mentioned in the introduction and literature review above. It also shows whether the information elaboration processes and a broader knowledge area of work groups are able to outperform smaller groups with a smaller knowledge area. In an indirect way, it can also give a picture whether social categorization, biases and stereotypes of heterogenous groups are stronger or weaker than the advantages deriving from highly diverse teams.

The regression models displayed in figure 15 to 17 show a strong negative relationship between the outcome variables and the number of group members. Looking at the p-value to find statistical evidence we saw the same picture as in previous examinations and tests. Total points as well as points for country related ideas had a significant p-value lower than 0.1. This depicts statistical evidence regarding the negative correlation between the two analysed variables. This is the first time that we found statistical evidence for a relationship with the variable of country specific ideas. Innovativeness with 0.17 was slightly above the upper limit for statistical significance. The marginal negative correlation regarding practical usefulness could not be statistical supported by the regression model, as compared to the previous analysis of age and performance. In the next part of our paper,

we will summarize the results of our analysis and come up with ideas for further research in this area including field experiments and suggested studies.

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. regress TotalPoints Numofgroupmembers
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Source	SS	df	MS	Number of obs	=	20
Model	14.8026316	1	14.8026316	F(1, 18)	=	5.23
Residual	50.9473684	18	2.83040936	Prob > F	=	0.0345
				R-squared	=	0.2251
				Adj R-squared	=	0.1821
Total	65.75	19	3.46052632	Root MSE	=	1.6824

TotalPoints	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Numofgroupmembers	-1.973684	.8630438	-2.29	0.035	-3.786872	-.1604965
_cons	11.39474	1.851023	6.16	0.000	7.505882	15.28359

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. regress Innovativeness Numofgroupmembers
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Source	SS	df	MS	Number of obs	=	20
Model	.95	1	.95	F(1, 18)	=	2.14
Residual	8	18	.444444444	Prob > F	=	0.1610
				R-squared	=	0.1061
				Adj R-squared	=	0.0565
Total	8.95	19	.471052632	Root MSE	=	.66667

Innovativeness	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Numofgroupmembers	-.5	.3419928	-1.46	0.161	-1.2185	.2185002
_cons	4	.7334928	5.45	0.000	2.458989	5.541011

Figure 15: Regression of Total Points and Innovativeness on number of group members

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. regress PracticalUseful Numofgroupmembers
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Source	SS	df	MS	Number of obs	=	20
Model	.094736842	1	.094736842	F(1, 18)	=	0.13
Residual	13.1052632	18	.728070175	Prob > F	=	0.7225
				R-squared	=	0.0072
				Adj R-squared	=	-0.0480
Total	13.2	19	.694736842	Root MSE	=	.85327

PracticalUseful	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Numofgroupmembers	-.1578947	.4377184	-0.36	0.723	-1.077507	.7617175
_cons	3.131579	.9388014	3.34	0.004	1.15923	5.103928

Figure 16: Regression of Practical Usefulness on number of group members

. regress PointsCountryrelated Numofgroupmembers						
Source	SS	df	MS	Number of obs	=	20
Model	6.57894737	1	6.57894737	F(1, 18)	=	3.65
Residual	32.4210526	18	1.80116959	Prob > F	=	0.0720
				R-squared	=	0.1687
				Adj R-squared	=	0.1225
Total	39	19	2.05263158	Root MSE	=	1.3421
PointsCountryre~d	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Numofgroupmembers	-1.315789	.6884708	-1.91	0.072	-2.762213	.1306339
_cons	4.263158	1.476605	2.89	0.010	1.160925	7.36539

Figure 17: Regression of Country related points on number of group members

8. Results

Throughout this section we are going to summarise the outcome of the analysis phase and clarify whether we were able to find statistically significant evidence for our hypotheses. We will also use the literature review as another reference point to see whether the results of our empirical study could be linked to existing literature. In the last chapter we will propose possible further areas of research. To start, we compare results with our assumption 1.

Assumption 1: Culturally heterogeneous teams outperform more homogenous groups with less diverse cultural knowledge / background. This would mean that international diversity in work groups is positively correlated with the overall outcome and performance of teams.

Assumption 1a: Internationally diverse teams achieve more points in the category “Innovativeness” than homogenous teams.

Assumption 1b: Internationally diverse teams achieve more points in the category “Practicability” than homogenous teams.

Assumption 1c: Internationally diverse teams achieve more points in the category “Innovativeness”, Country related to Austria and Japan.

In our statistical analysis, we found no evidence that multicultural work groups achieved better results than homogenous groups. This was observed in all 3 performance indicators as well as in the overall achieved Total points. In contrast to that, we found support for a negative correlation, which means that less cultural knowledge leads to a better outcome. However, this could not be statistically proven by any performed stata model since the p-value was above the significance level. Unfortunately, we could not find a reason for this outcome of the study since it could derive from the small scope of the field experiment as well as from the limitations mentioned above. Therefore, we have to admit that our field experiment does not support assumption 1 (incl. a-c), which was derived from the collected results of the literature review. Nevertheless, it must be said that also the results of studies in existing literature showed different outcomes. This was also mentioned in the upper part of the paper and one aim of this work was to bring more evidence to this particular area with its controversial results.

Assumption 2: Teams with Austrian or Japanese group members achieve more points than teams without members from these two countries in the category “Country related ideas to Austria and Japan”. Their personal background should give them an advantage. Therefore, the Austrian or Japanese nationality of group members is positively correlated with the outcome and performance in the category “Country related ideas to Austria and Japan”.

As a starting point, we categorised work groups and found out that eleven out of twenty teams had team members with roots from Austria or Japan. As described above, we expected that these groups with team members from Japan or Austria would generate ideas which were more country related compared to other teams. Surprisingly, most of the collected answers were very generic and without any focus on Japan, therefore also not beneficial for an Austrian manufacturer trying to enter the Japanese market. Therefore, the mean of achieved points for this performance indicator was significantly the lowest compared to the other two. What is more, no positive correlation could be provided. Neither a trend nor a statistically significant model. Collected and screened answers gave the impression that people focused too much on the given examples and did not focus on the requested tasks. Therefore, we think that groups tried to copy the given examples and apply them as good as possible for their given problem statement. Unfortunately, without any serious attempt to come up with country related ideas.

Assumption 3: Teams with a common mother language outperform teams with different mother languages. Even if the level of the common language is sufficient, we suppose that a common mother tongue is positively correlated with the performance of teams, since it supports the information elaboration process and prevents biases and subgroups.

Through this hypothesis we wanted to clarify whether the integration elaboration process as the main benefit of multicultural teams could be harmed through difficulties in the communication process. Even when group members have an acceptable command of any given language, we assumed that groups who were integrating information using their mother language have lower or no biases and are therefore able to achieve better results. We tested the hypothesis in Stata, with the result that in all 4 categories the mean of the groups without diversity in their mother language were higher. The average of these twelve groups with the same mother language was one point higher in the category Total points than in the others. Also, minimum and maximum values were higher than in the diverse

groups. However, it cannot be said for sure that all groups used their common mother language during the exercise. Nevertheless, this hypothesis could be confirmed and therefore also the hypothesis that language is one of the main factors for performance obstacles within work groups.

After the analysis of the main assumptions, we would now like to highlight some experiences we made during the experiment and especially during the analysis phase.

The main takeaway during the analysis phase was the influence of group age on the practicability of generated ideas. Groups with a higher average age achieved significantly better results than younger groups. This can be attributed to the mindset of people between 27-35. They think differently and are looking for more practicable ideas, which they derive from experiences when they failed or encountered possible areas of improvements. In return, we assumed that these people were also able to achieve strong results in terms of creativity. However, in this regard we have to differentiate between the ideation, conception and execution phase, where we assign practicable people to the conception and execution phase. Therefore, no direct link could be found between practicable people and creativity as performance indicator. What is more, another interesting fact was that similar to the level of cultural knowledge, also the level of languages was not significantly influencing performance. This continued in the study of gender diversity within work groups, where no significant difference could be observed. Without clear statistical evidence, there is a slight trend towards gender diverse groups being advantageous, except for the areas of innovativeness and practicability, where the level is roughly the same. Therefore, no biases or advantages of gender diverse groups could be supported. As the indicator, we wanted to focus on group sizing, since group sizes differed between one and three group members. Surprisingly, a strong negative relationship between group size and achieved points was found, which could also be supported by statistical evidence.

To conclude, we can say that all these findings point in the same direction.

Our empirical field experiments showed that within a work group less diversity in terms of culture and language resulted in a better outcome and higher performance. Moreover, less team members were also a favourable circumstance for more creative, innovative and practicable ideas. The gender played no significant role and a higher mean age within work groups was positively correlated with practical answers.

As a result, our empirical part showed that biases and negative social categorization processes are overwhelmingly positive advantages during the information elaboration processes of culturally diverse teams.

9. Discussion

Our research paper delivers a summary of existing literature and different perspectives of culturally diverse work groups including advantages and disadvantages. What is more, the field experiment provides further evidence on top of already existing literature which currently just offers controversial results. Results and findings observed during the experiment match a very old and conservative approach stating that culturally diverse teams harm information elaboration processes and underperform homogenous groups. Due to the scope and given limitations of our field study, we propose to conduct further experiments based on existing literature and also on the gathered information and insights of our paper. We therefore propose two further investigations. First of all, an extended research on all possible moderating variables such as group sizing, age, gender, etc. to gather a better overall picture and understanding of these variables. This will give more certainty and a better understanding how all these variables are interlinked and influencing the overall results. Reason behind this proposal is that we suppose moderating variables have a much bigger influence on performance than previously assumed. Only if all interfaces and interlinks with surrounding variables are clarified a much better understanding and standardized model can be set up. The high number of involved moderators, facilitators and variable without direct influence but substantial indirect influence on the performance brings a significant complexity into these researches. Also, small highly controlled and limited experiments can solve this issue in our opinion.

As a second study, we would propose an extended field study building up on the findings of the first suggested experiment. It should consist of a practical experiment and case study like we did with a much larger scope of work groups and timeframe, to monitor possible changes in behaviour through observation of individuals during the processes. A controlled work group composition could also lead to a stronger focus on the main research area. During the draft of the literature review, we recognised that a lot of theoretical knowledge already exists. Unfortunately, only limited data of practical experiments and observations were available. This research area is highly important for companies around the globe as well as for the social dimension they are operating in. Since findings and results can be a substantial benefit and competitive advantage, it should be easy to find researchers for the topic or even international corporations, which have branches all over the world, to examine differences between countries and continents.

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