

Investigating the double-edged sword:

**Two forms of cultural diversity and
their effects on team processes and
effectiveness**

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Contents

Figures.....	IX
Tables	XI
Abstract	XIII
1. Introduction	1
1.1 Cultural diversity research as a reaction to recent trends in business practice	1
1.2 Aims of the present research.....	2
1.3 Layout of the thesis	6
2. Workgroups.....	9
2.1 Defining workgroups	10
2.2 Group effectiveness models.....	13
2.2.1 McGrath's I-P-O-model of group effectiveness	14
2.2.2 Hackman's normative model of group effectiveness.....	16
2.2.3 The "Big Five" of teamwork	18
2.2.4 The IMOI-model of group effectiveness	21
2.3 Differentiating different forms of groups	21
2.3.1 Traditional forms of workgroups	22
2.3.2 Newer forms of workgroups	23
2.4 Implications for the present research	27
3. Innovation and innovativeness.....	28
3.1 Defining innovation	29
3.2 Conceptualizing innovativeness.....	31
3.3 Innovation process	33
3.4 Creativity and its role in the innovation process.....	35
3.4.1 Defining creativity	35
3.4.2 Creativity and innovation.....	36
3.4.3 Group creativity	38
3.5 Motives for innovation management at an international scale	41
3.6 Teamwork in innovative activities.....	43
3.6.1 Rationale for teamwork in innovative activities	43
3.6.2 Team innovation effectiveness	47
3.6.3 The international dimension of innovative teams.....	52
3.7 Summary and implications for the present research	57
4. Diversity	59
4.1 Defining diversity	60
4.2 Theoretical foundations of diversity research.....	62

4.2.1	Similarity–attraction theory	62
4.2.2	Social identity and social categorization theory	63
4.2.3	Faultline theory	65
4.2.4	Cognition theory	66
4.2.5	Information processing theory	69
4.2.6	Resource-and competency-based view of the firm	71
4.2.7	Other diversity theories	74
4.3	Diversity effects in organizations	75
4.4	Forms of diversity	78
4.4.1	Surface- vs. Deep-level diversity	78
4.4.2	Task-related and relations-oriented diversity	79
4.4.3	Separation, variety and disparity	80
4.5	Summary and implications for the present research	84
5.	Cultural diversity	86
5.1	Defining culture	87
5.2	Models of culture in management research	91
5.2.1	Overview of cultural models	91
5.2.2	Kluckhohn and Strodtbeck’s (1961) cultural value orientations	96
5.3	Cultural diversity	102
5.4	Critical review of prior research on cultural diversity in teams	103
5.4.1	Empirical results from prior cultural diversity research	104
5.4.2	Culture – conceptualization and operationalization	107
5.4.3	Diversity – operationalization and measurement	108
5.4.4	Conceptual limitations of cultural diversity research	109
5.4.5	Methodological limitations of prior cultural diversity research	112
5.4.6	Conclusions and implications for the present research	115
6.	Development of hypotheses	117
6.1	Cultural diversity and team processes	118
6.1.1	Cultural diversity and the quality of workgroup communication	119
6.1.2	Cultural diversity and conflict	122
6.1.3	Cultural diversity and task reflexivity	124
6.1.4	Communication mediating the relationship between cultural diversity and task reflexivity	126
6.2	Cultural diversity and creativity	127
6.2.1	Cultural variety and creativity	128
6.2.2	Cultural separation and creativity	129

6.2.3 Team communication mediating the relationship of cultural diversity and creativity.....	131
6.2.4 Task conflict mediating the relationship between cultural diversity and creativity.....	132
6.2.5 Task reflexivity mediating the relationship between cultural diversity and creativity.....	132
6.3 Cultural diversity and innovativeness.....	133
6.3.1 Cultural variety and innovativeness.....	134
6.3.2 Cultural separation and innovativeness	136
6.3.3 Quality of workgroup communication mediating the relationship between cultural diversity and innovativeness	138
6.3.4 Task conflict mediating the relationship between cultural diversity and innovativeness	139
6.3.5 Task reflexivity mediating the relationship between cultural diversity and innovativeness	140
6.3.6 Creativity mediating the relationship between cultural diversity and innovativeness	140
6.4 Summary and implications	141
7. Methodology and Research Design.....	142
7.1 Research Design	143
7.2 Sample	149
7.3 Survey Procedure.....	153
7.4 Data Collection	153
7.4.1 Development of the questionnaire	153
7.4.2 Creativity task	154
7.4.3 Business plan administration	154
7.5 Missing data analysis	155
7.6 Data processing and aggregation	156
7.7 Data analysis	159
7.7.1 Data analysis with structural equation modeling technique	159
7.7.2 Reflective and formative measurement models.....	162
7.7.3 Assessing the quality of reflective and formative measurement models.....	166
7.7.4 Assessing the quality of the structural model	172
7.8 Measures	174
7.8.1 Exogenous variables	174
Cultural diversity in the form of separation	178
Cultural diversity in the form of variety.....	178

National diversity	179
7.8.2 Group process variables.....	180
Team communication.....	180
Task conflict.....	182
Team reflexivity	182
7.8.3 Endogenous variables	183
Creativity	183
Attractiveness of the idea	184
Innovativeness.....	185
8. Results	190
8.1 Cultural diversity, national diversity, and team processes.....	191
8.2 Cultural and national diversity and creativity	195
8.3 Cultural and national diversity and innovativeness	198
8.4 Overview of the empirical results	206
9. Discussion and conclusions.....	209
9.1 Cultural diversity, national diversity, and team processes.....	211
9.1.1 Cultural diversity and workgroup communication	211
9.1.2 Cultural diversity and task conflict.....	212
9.1.3 Cultural diversity and task reflexivity.....	213
9.2 Cultural diversity, national diversity, and creativity.....	215
9.2.1 Direct effects of cultural and national diversity on creativity.....	215
9.2.2 Indirect effects of cultural and national diversity on creativity	217
9.3 Cultural diversity, national diversity, and innovativeness	219
9.3.1 Direct effects of cultural and national diversity, and creativity on innovativeness	219
9.3.2 Indirect effects of cultural and national diversity on innovativeness	224
9.4 Theoretical contributions	225
9.4.1 Contributions to diversity and group research.....	225
9.4.2 Contributions to creativity and innovation research	228
9.5 Practical implications.....	229
9.6 Limitations and avenues for further research.....	231
9.6.1 Methodological limitations	231
9.6.2 Conceptual limitations	233
9.7 Conclusions.....	234
References	236
Appendices	314

Figures

Figure 1: Starting points and aims of the present research	3
Figure 2: Layout of the thesis.....	8
Figure 3: Outline of the second chapter	9
Figure 4: McGrath's model of group effectiveness	14
Figure 5: Hackman's normative model of group effectiveness.....	17
Figure 6: Relationships among Big Five of teamwork and their coordinating mechanisms ..	19
Figure 7: Overview of different conceptualizations of virtual teams.....	25
Figure 8: Dimensions of newer forms of teamwork	26
Figure 9: Outline and contents of the third chapter.....	28
Figure 10: Different conceptualizations of the innovation process.....	33
Figure 11: Flowchart of the SIAM model of group creativity	39
Figure 12: Driving forces behind the internationalization of innovative activities.....	42
Figure 13: Model of team innovation effectiveness.....	47
Figure 14: Outline of the fourth chapter.....	59
Figure 15: Overview of trends that increase the importance of diversity for organizations...	61
Figure 16: Process for developing new schemas	68
Figure 17: Austin's cognitive model of group diversity.....	69
Figure 18: Generic information processing model.....	70
Figure 19: Mechanisms to create competitive advantages in the resource-based view	72
Figure 20: Creating sustainable advantages in the dynamic capabilities view	73
Figure 21: Diversity effects in organizations	76
Figure 22: Diversity theories and their effects	77
Figure 23: Key attributes of diversity in the form of separation.....	81
Figure 24: Key attributes of diversity in the form of variety	82
Figure 25: Key attributes of diversity in the form of disparity	83
Figure 26: Contents and outline of the fifth chapter	86
Figure 27: Cultural values and higher-order value types	94
Figure 28: Kluckhohn and Strodtbeck's value orientations.....	97
Figure 29: Identified methodological limitations of diversity research	112
Figure 30: Outline of Chapter 6	117
Figure 31: Theoretical model for effects of cultural and national diversity on team processes.....	119
Figure 32: Theoretical model of effects from cultural and national diversity on creativity.....	128

Figure 33: Theoretical model of effects from cultural and national diversity on innovativeness	134
Figure 34: Outline and contents of the seventh chapter	142
Figure 35: Contrasting research traditions	143
Figure 36: Interactions between cultural values, value orientations, and human behaviour	148
Figure 37: Process to assess a PLS path model.....	162
Figure 38: Schematic diagram of a reflective measurement model.....	163
Figure 39: Schematic diagram of a formative measurement model.....	164
Figure 40: Satisfaction as a reflective or formative construct.....	166
Figure 41: Process to construct and validate a formative measurement model	169
Figure 42: Outline of Chapter 8	190
Figure 43: Empirical path model for team processes.....	194
Figure 44: Empirical path model for creativity	198
Figure 45: Empirical path model for innovativeness	203
Figure 46: Empirical path model (innovativeness2)	205
Figure 47: Outline and contents of the ninth chapter	210

Tables

Table 1: Overview of definitions for workgroups.....	11
Table 2: Overview of definitions for diversity.....	60
Table 3: Overview of definitions for culture.....	87
Table 4: Hofstede's cultural dimensions	92
Table 5: Illustrative example of differences between operationalization and empirical objects in diversity research	114
Table 6: Overview of participants' origin.....	152
Table 7: Overview of interrater reliabilities for team-level constructs	157
Table 8: Overview of interrater reliabilities after elimination	158
Table 9: Means and standard deviations before and after data imputation.....	159
Table 10: Decision rules whether a construct is formative or reflective.....	165
Table 11: Quality criteria for reflective measurement models.....	168
Table 12: Quality criteria for formative measurement models	172
Table 13: Quality criteria for structural models	174
Table 14: Overview of means, standard deviations, and composite reliabilities of the CPQ4	175
Table 15: Correlations between dimensions of the CPQ4 and assessment of discriminant validity.....	177
Table 16: Quality criteria for team communication	181
Table 17: Quality criteria of the team task conflict scale.....	182
Table 18: Quality criteria for the team task reflexivity scale.....	183
Table 19: Quality criteria of the team creativity scale	184
Table 20: Quality criteria for the attractiveness of the idea scale	185
Table 21: Correlations among formative indicators of innovativeness.....	186
Table 22: Multicollinearity statistics with novelty as dependent variable	187
Table 23: Multicollinearity statistics with extent of change as dependent variable.....	187
Table 24: Multicollinearity statistics with macro impact as dependent variable	188
Table 25: Multicollinearity statistics with micro impact as dependent variable.....	188
Table 26: AVE and correlations between constructs	191
Table 27: Overview of quality criteria	191
Table 28: Effect sizes and predictive quality of the model.....	192
Table 29: Statistical results for path estimation	192
Table 30: Statistical results for indirect paths	193
Table 31: AVE and correlations between constructs	195

Table 32: Cross-loadings of creativity items with other latent variables in the creativity model.....	196
Table 33: Effect sizes and predictive quality of the creativity model.....	196
Table 34: Statistical results for path estimations.....	197
Table 35: Statistical results for indirect effects.....	197
Table 36: AVE and correlations between constructs	199
Table 37: Cross-loadings of creativity items with other latent variables in the model.....	200
Table 38: Effect sizes and predictive quality of the model (innovativeness).....	201
Table 39: Statistical results for path estimation (innovativeness).....	202
Table 40: Effect sizes and predictive quality of the model.....	204
Table 41: Statistical results for path estimation (innovativeness2).....	204
Table 42: Statistical results for the indirect effects	205
Table 43: Overview of the significant empirical results	207
Table 44: Overview of supported and rejected Hypotheses.....	208

Abstract

Investigating the double-edged sword:

Two forms of cultural diversity and their effects on team processes and effectiveness

Matthias Kramer

Firms' international scope of activities and growing workforce mobility foster the development of teams which are composed of members with different cultural backgrounds. Research on cultural diversity has found large inconsistencies concerning the effects of multicultural team compositions. This led to seeing cultural diversity as a double-edged sword with a potential to yield positive and negative effects in organizations. In contrast to much previous cultural diversity research, this work has conceptualized and measured cultural diversity as deep-level diversity across multiple cultural value dimensions. With a sample of 97 international and multicultural entrepreneurship teams, this research empirically tested effects of two forms of cultural diversity (separation and variety) on team processes and effectiveness. Findings show that cultural diversity in the form of variety has the positive effect of higher creativity in teams, while cultural diversity as separation has negative effects of lower communication quality and lower creativity. The effects of diversity on creativity, however, do not further influence team innovativeness. In addition to the main effects, the results include mediating effects with team processes of communication, task conflict, and task reflexivity. The thesis discusses theoretical implications for diversity research and provides suggestions for practitioners in global team management.

1. Introduction

1.1 Cultural diversity research as a reaction to recent trends in business practice

Scientific and popular science have characterised the past decades as strongly influenced by (economic) globalisation. Kissling et al. (2006) suggesting that the world has become “flatter” (Friedman, 2005), which implies changes for marketplaces and employees, as well as the requirement for new, culturally specific, flexible and innovative solutions. Firms have developed different strategies and organizational structures to respond to challenges and opportunities from globalized economies, e.g. by following multinational, international, global or transnational approaches (Bartlett, et al., 2003). These approaches influence the importance of cultural diversity in firms, as does an increasing domestic multiculturalism from international mobility of people (Wüstner, 2009). The major trend of globalization is one factor that leads to increased diversity in organizations - legal requirements, the emergence of a knowledge economy, and a socio-demographic change in many important economies are considered as further driving forces (Cox, 1993; Kearney & Gebert, 2009; Wüstner, 2006). The diverse workforce and the international or global operations of firms is accompanied by an increasing reliance on workgroups as less hierarchical organizational structures (Mannix & Neale, 2005; Piña et al., 2008).

The changed nature of organizations and work in globalized economies have led to the emergence of newer forms of workgroups (Kozlowski & Bell, 2003). Discerning different perspectives, the terms “global”, “international”, “cross-cultural”, “virtual”, or “dispersed” workgroups aim to capture the phenomena of international distribution of labour, as well as cooperative requirements within workgroups (Högl, 2005). For several years, these forms of workgroups have become established in organizations. There seems to be a wide agreement that these forms are associated with cultural diversity at the team-level (Adenfelt & Lagerström, 2006; Daim et al., 2012).

The increasing economic globalization means that companies have to deal with more and fiercer competition and market dynamism (Gassmann & Bader, 2007). In the global competitive environment, knowledge and ideas have increasingly become important “raw materials” in a knowledge economy (Stehr, 2001). Firms apply systematic practices to capture value from knowledge and ideas by creating and introducing innovations into global

markets. They have internationalized their innovative activities in global research and development (R&D) networks or international co-operations (Mudambi et al., 2007; UNCTAD, 2005). One advantage of the internationalization of innovation is balancing between global standardization and adaptation to specific or unique features of international markets (Subramaniam & Venkatraman, 2001). A second advantage resides in international learning activities in which firms extend their activities to foreign countries to tap into innovative and progressive knowledge (Bartlett et al., 2003). Since workgroups are considered effective means for solving complex problems (George, 2007), teamwork is a common organizational form for generating innovations (Edmondson & Nembhard, 2009). Internationalization of innovative activities and reliance on teamwork require team members with different nationalities and cultures to be creative and identify, as well as introduce new business ideas. There is a little over ten year's history of global teams becoming established and being increasingly used in new product developments (McDonogh et al., 2001).

However, the trend of internationalization and globalization is not limited to existing and larger firms. International entrepreneurship research has recently focused on born global firms and international new ventures (Cesinger et al., in press). In the area of entrepreneurship research, Ireland and Webb (2007) call for studies on how entrepreneurs can structure their top management teams to facilitate creativity and innovation. Global teamwork and cultural diversity have often been considered as beneficial especially to yield creativity and innovativeness (Cox, 1993; Griffin & Moorhead, 2009). Despite the growing reliance on culturally diverse workgroups in practice and the associated importance of cultural diversity for management research, many aspects of cultural diversity remain unknown or uncertain. The following section introduces how the present study aims to advance literature on cultural diversity in workgroups.

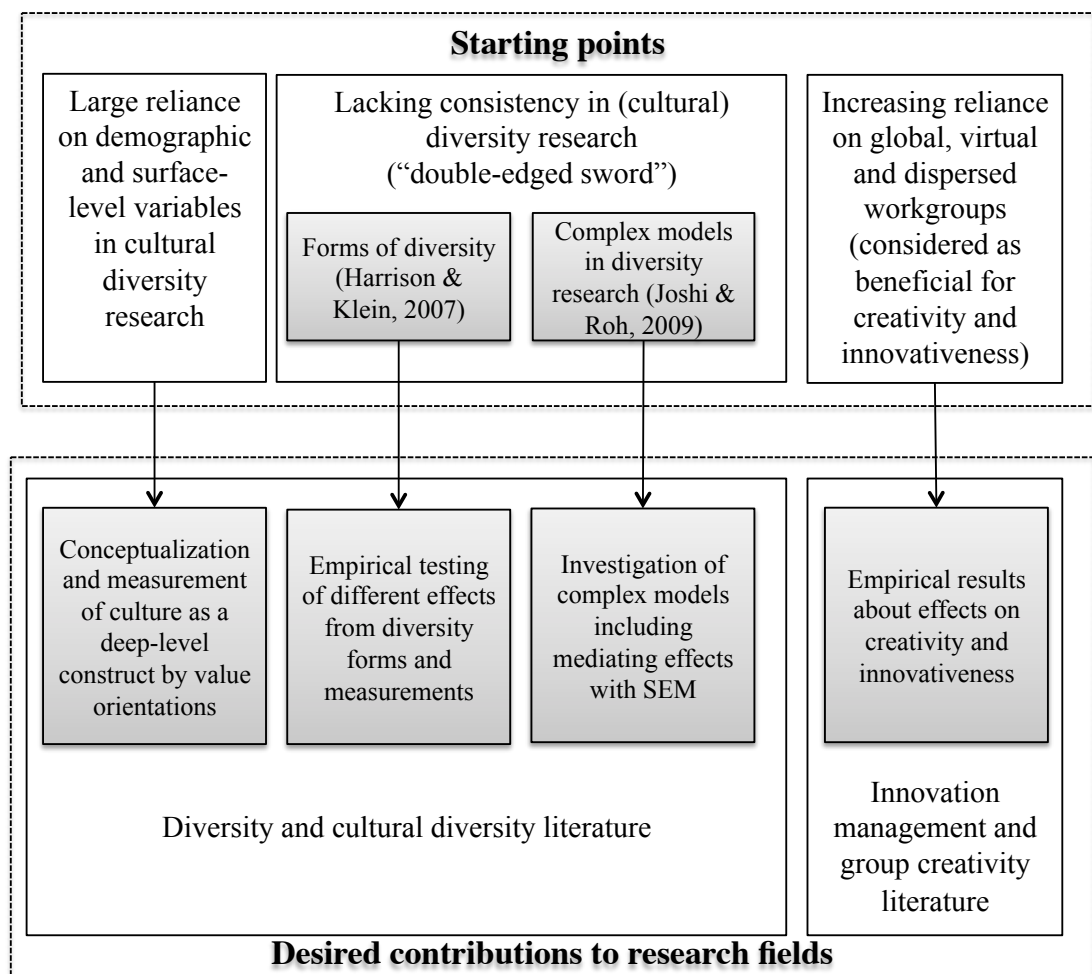
1.2 Aims of the present research

The present research aims at contributing to the literature on (cultural) diversity, innovation management and group creativity. The respective starting points and desired contributions are visualized in Figure 1 and will be henceforth described.

Jackson et al. (2003) and Kirkman and Shapiro (2005) have criticised that there has been surprisingly little research on cultural diversity in teams. More recently, this criticism has been repeated by Hinds et al. (2011) finding that literature on virtual teams and global work has largely ignored national culture. One reason for lacking attention in national culture as a diversity attribute in teams is that diversity research has largely emphasized demographic

and surface-level attributes (van Emmerik & Brenninkmeijer, 2009). For cultural diversity research, many studies have used nationality, ethnicity, race, and gender (or combinations of these attributes) as indicators for cultural diversity (Earley & Mosakowski, 2000; Paletz et al., 2004; Richard et al., 2004; Watson et al., 2005). In contrast to much previous work on cultural diversity, the present research aims to study cultural diversity as deep-level, due to the latent, implicit, and deeply-held nature of culture (DiStefano & Maznevski, 2000; Schein, 2004). Thus, cultural diversity will be understood in this thesis as a team-level compositional variable describing diversity related to team members' cultural values.

Figure 1: Starting points and aims of the present research



Culture and values are important factors for workgroup diversity due to their strong identity-generating nature (Gouveia et al., 2002) and influences on behaviour (e.g., House et al., 2004; Ros et al., 1999). Cultural diversity can involve different identities within workgroups, establishing relationships of similarity and differentness between individuals and collectives that are then used for defining one's own identity (Jenkins, 2008). The business rationale for diversity research arises from the fact that people who identify themselves as part of an

organization or group often respond with increased commitment and performance, thereby influencing team and organizational outcomes.

Despite many years of scholarly work, diversity research has often been criticised for the lack of consistency in main effects. Many meta-analyses and review articles have bemoaned the absence of clear and discernable patterns (Harrison & Klein, 2007; Jackson et al., 2003; Joshi & Roh, 2009; Milliken & Martins, 1996). Researchers have inferred from these findings that diversity has the potential to produce positive and negative outcomes (van Knippenberg et al., 2004), leading to the consideration of diversity as a “double-edged sword” (e.g., Kravitz, 2005; Milliken & Martins, 1996).

The metaphor of the “double-edged sword” applies equally to cultural diversity research, as the literature review in the present study identifies inconsistent and inconclusive findings. A recent meta-analysis by Stahl et al. (2009) arrived at a similar conclusion, finding a virtually zero mean effect size of cultural diversity on performance. Yet, the effects ranged between -.60 to .48 (comparable for all other main effects of cultural diversity). Hence, cultural diversity appears to yield a potential for highly positive and negative effects on team performance at the same time.

In order to explain inconclusive findings from diversity research, Harrison and Klein (2007) distinguished between different forms of diversity: separation, variety, and disparity. The present research builds on that differentiation of diversity forms, and argues that different forms of cultural diversity have different and opposite effects on group processes and outcomes. In particular, this research develops a theoretical model that distinguishes cultural diversity in the form of separation from cultural diversity in the form of variety. The aim of this model is to investigate whether the underlying form of diversity accounts for different and opposite effects found in previous cultural diversity research. Cultural separation conforms to the social identity perspective of diversity (Harrison & Klein, 2007; Williams & O'Reilly, 1998), while cultural variety captures the “value-in-diversity” perspective (e.g., Cox et al., 1991; Ely & Thomas, 2001). Furthermore, the theoretical model includes nationality as a diversity characteristic, since nationality has been frequently used to operationalize culture in previous research. It is therefore also intended to investigate how suitable the categorical variable of nationality is to assess cultural diversity in workgroups.

This research furthermore aims at testing effects of both forms of cultural diversity (separation and variety) on creativity and innovativeness, since global, dispersed and virtual workgroups are increasingly relevant for R&D and other innovative activities. In addition, culturally diverse team compositions have been considered as beneficial for creativity and

innovativeness (e.g., Cox, 1993; Griffin & Moorhead, 2009). When the influence of diversity on innovativeness has been previously explored, such research has typically focused on the range of knowledge and skills brought about by cross-functional or interdisciplinary teams with their respective networks and external communication (Ancona & Caldwell, 1992; Lovelace et al., 2001; Reagans & Zuckerman, 2001). Only recently, researchers have started investigating other antecedents as e.g., from national diversity (e.g., Kearney & Gebert, 2009). The rationale for studying cultural diversity in the context of creativity and innovativeness, however, arises from two factors: First, the strong identity-generating nature of culture is a source of categorization and stereotyping that affects team processes and effectiveness stronger than other sources (Stahl et al., 2010). Especially highly complex, dynamic and risky innovation projects require functional social and cognitive team processes (Gebert, 2004). Second, it is widely assumed that people from different cultures have different knowledge structures, thinking modes and cognitive contents (e.g., Stahl et al., 2010), because culture is regarded as the mental frame of references shared by members of a social group that governs cognition (e.g., House et al., 2004; Hofstede, 1980). The greater variety of cognitive structures can therefore be considered as an increased knowledge and thinking pool upon which the workgroup can draw for novel ideas and combinations, as well as to increase their evaluative capacity along the innovation process.

Since creative and innovative tasks are uncertain and complex, this research also investigates mediating effects in culturally diverse teams. Team processes are considered to mediate the relationship between team inputs and outputs (McGrath, 1964). The present research includes team processes of communication, task reflexivity, and task conflict, because of their assumed importance for creative and innovative team outcomes (e.g., West & Hirst, 2005).

The direct and indirect effects with several mediating variables lead to complex models that are empirically tested with a sample of international entrepreneurship student teams. Hence, due to the sample, this thesis also has a relation to (international) entrepreneurship literature, where researchers investigate top management team compositions (e.g., Matley & Westhead, 2005) and more recently, the role of diversity for identifying business opportunities and developing business ideas (e.g., Gielnik et al., 2012; Gruber et al., in press).

Based on a methodological argumentation that common measures for diversity in the form of separation and variety do not reliably distinguish the underlying form of diversity, this research aims at discerning the respective effects of cultural variety, cultural separation, and

national diversity in the same models. The associated complexity requires an analysis of the data with a structured equation modeling (SEM) technique using partial least squares (PLS).

1.3 Layout of the thesis

This thesis is organized in nine chapters as follows. After this first introductory chapter, the following four chapters provide theoretical foundations on workgroups, innovation and innovation management, diversity, as well as cultural diversity.

The chapter on workgroups serves several purposes. First, it constitutes a boundary condition of the present research that focuses solely on diversity effects at the team-level, not at firm-level or individual-level. In addition, the second chapter provides relevant definitions and characteristics of workgroups and introduces models of effectiveness, which serve as the theoretical guideline of the present research. Furthermore, different types of workgroups are introduced as well as discussed with regard to culturally diverse compositions.

The third chapter presents literature on innovation. Beyond definitions, the chapter introduces the concept of creativity as an antecedent to innovativeness. Paving the path for cultural diversity in creative and innovative teams, the chapter reviews literature on international innovation management and on the role of (global) teamwork.

The fourth chapter focuses on the concept of diversity. In addition to definitions, it describes theoretical foundations of diversity literature. The theories serve as explanations for different effects diversity has been found to have within organizations. Beyond an overview of these effects, forms of diversity are presented and discerned in that chapter.

A fifth chapter introduces cultural diversity to the reader. Because culture is a complex phenomenon, two subchapters define culture and provide an overview of various models of culture that have found their way into management literature. In the following sections, the chapter deals with cultural diversity by reviewing results, and discussing conceptual and methodological limitations of prior research. These theoretical chapters are followed by a sixth chapter that serves to integrate the theoretical foundations and develop testable hypotheses.

Thereafter, Chapter 7 introduces methodological considerations for the empirical section in this thesis. It serves as argumentative rationale for decisions on the research design, survey

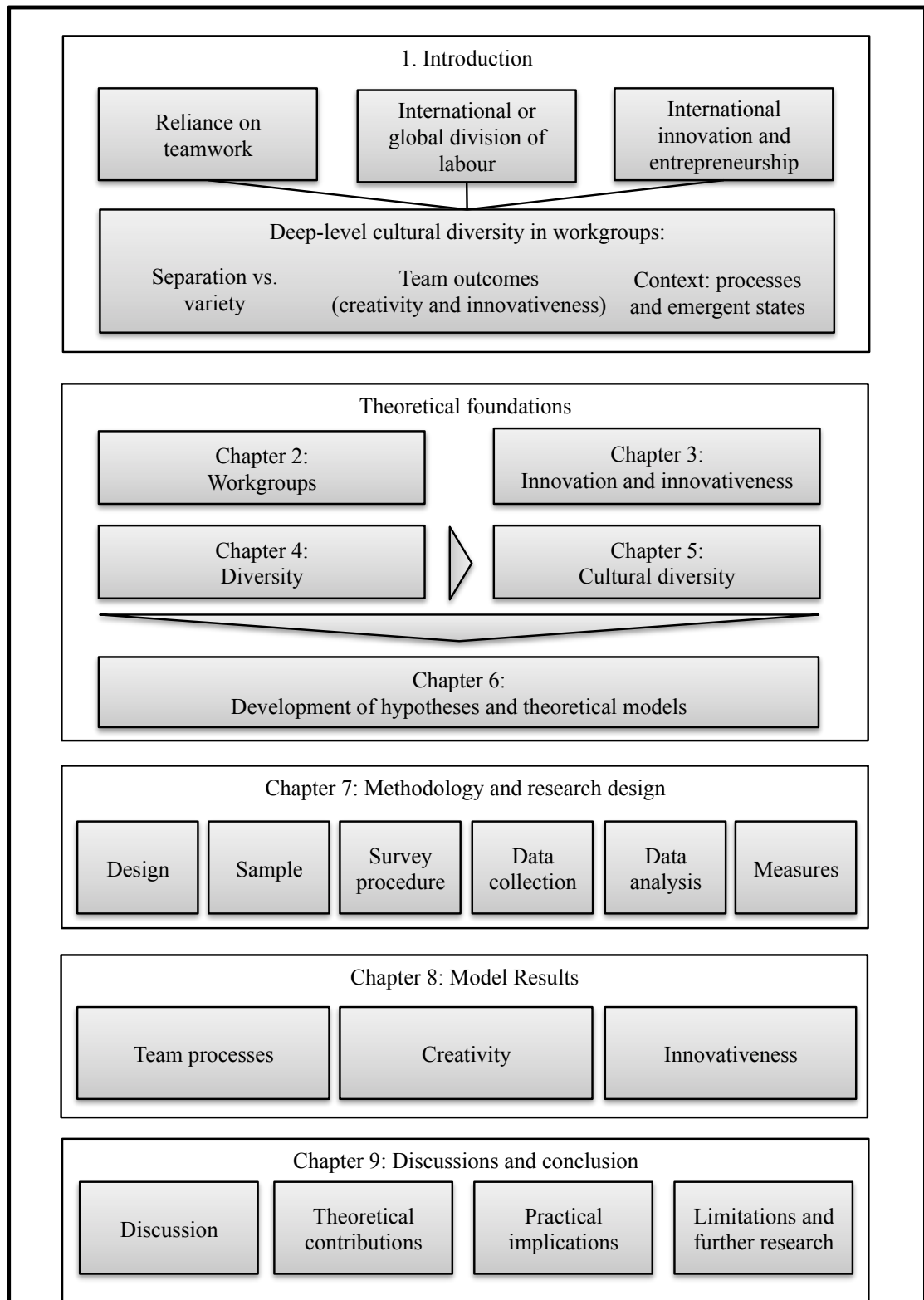
procedure, and analysis. Furthermore, it describes the psychometric properties of the measures used in the present research.

An eighth chapter presents the results of the empirical study. In accordance with the structure of the developed hypotheses, the results are presented for several models that involve direct and indirect effects on team processes, creativity, and innovativeness.

The ninth and final chapter discusses the main findings of the present research, puts them into context of prior results and theoretical foundations. Within this chapter, several conclusions are drawn and their theoretical implications for diversity literature and other research fields are offered. Furthermore, the implications of this research for practice is discussed. Eventually, the chapter describes the limitations of the present thesis and its empirical study, and points to future avenues for research.

The outline of this thesis is summarized in the following Figure 2.

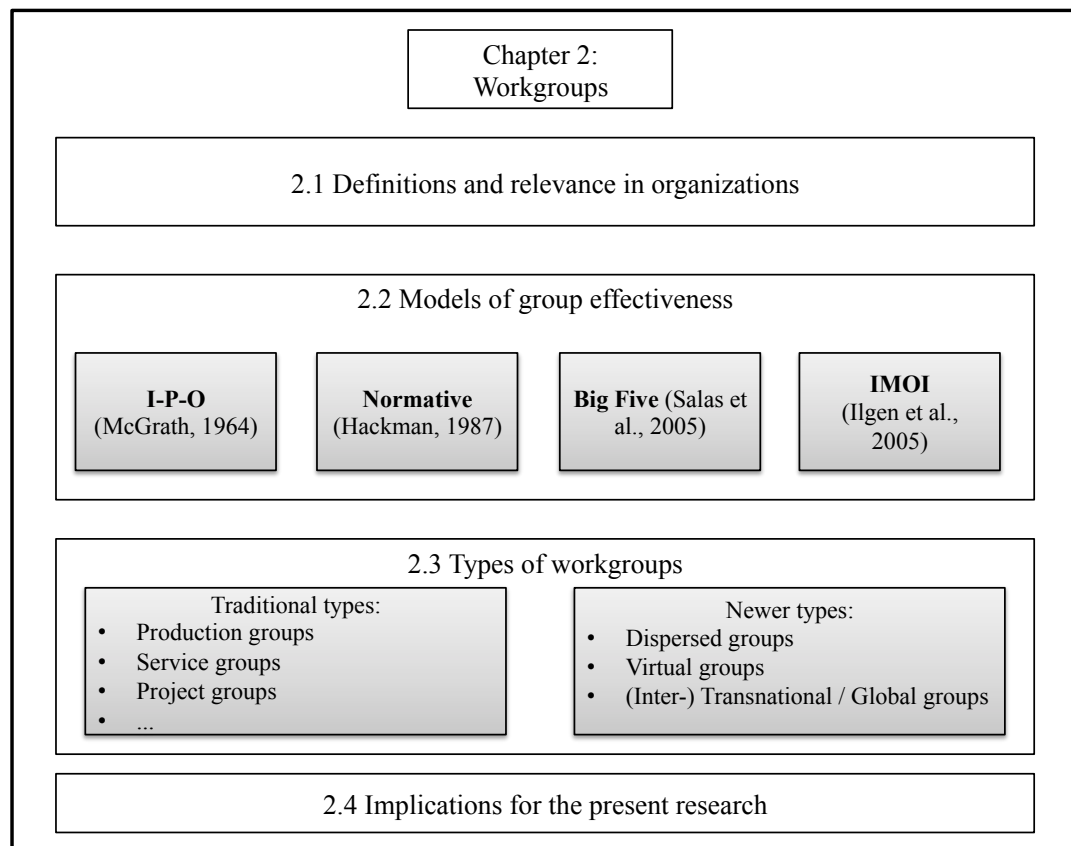
Figure 2: Layout of the thesis



2. Workgroups

The purpose of this chapter is to introduce theoretical foundations on workgroups. The first subsection will define workgroups and point to the importance of teamwork in organizational contexts. In the second subsection, different models of group effectiveness will be summarized, as they compose the theoretical foundation for analysing effects of cultural diversity on team processes and effectiveness. Thereafter, a third subsection deals with different types of workgroups, differentiating between traditional and newer types used in organizational contexts. Figure 3 illustrates the outline of the second chapter.

Figure 3: Outline of the second chapter



2.1 Defining workgroups

Workgroups or teams have been the subject of many studies from various scientific disciplines. Different interpretations exist whether the terms “workgroup” and “team” are to be used synonymously. Many authors (e.g., Brooks, 2003) follow the notion of Katzenbach and Smith (1993), that “group” describes a basic form of collaboration between individuals. In contrast, “teams” are characterized by a special quality of cooperation between team members and thus “connotes more than a group” (Guzzo & Dickson, 1996, p.309). Teams are often associated with a strong cohesion between members, a high degree of interaction, as well as close and synergistic relationships. The differentiation between „team“ and „group“ has often been criticised, mainly for the fact that the differentiation requires an “arbitrary” decision by the authors (Tschan, 2000) that allows a variety of different interpretations. Many authors use both terms interchangeably, arguing either based on the criticism above or by the fact that the differentiation between both terms is not established in literature (Chen & Kanfer, 2006; Cohen & Bailey, 1997; Guzzo & Dickson, 1996; Ilgen, 1999; Johnson et al., 2002; Kozlowski & Bell, 2003; Stock, 2004; Sundstrom et al., 2000; Tschan, 2000). Already in 1996, Guzzo and Dickson (1996) established that the term “team” has largely replaced the terms „workgroup“ or “group”. While recognizing the differences in the understandings of „(work)groups“ and „teams“, in this thesis they are not considered as fundamental enough to require different labels. Hence, following the widely accepted practice, „teams“ and „workgroups“ are used synonymously.

The study of workgroups in various disciplines, e.g. in the fields of organization, management and social psychology research, has led to the use of different definitions of teams. The following Table 1 presents a selection of important definitions.

Table 1: Overview of definitions for workgroups

Author	Definition
Schein, 1980, p.108	“A psychological group is any amount of people who (1) interact with each other, (2) are psychologically aware of each other, and (3) perceive themselves as a group.”
Alderfer, 1987, p.202	A human group is a collection of individuals (1) who have significantly interdependent relations with each other, (2) who perceive themselves as a group, reliably distinguishing members from nonmembers, (3) whose group identity is recognized by non-members, (4) who, as group members acting alone or in concert, have significantly interdependent relations with other groups, and (5) whose roles in the group are therefore a function of expectations from themselves, from other group members, and from non-group members.
Tannenbaum, Beard, & Salas, 1992, p.118	“For our purposes, a team is defined as a distinguishable set of two or more people who interact dynamically, interdependently, and adaptively towards a common and valued goal / objective / mission, and who each have some specific roles or functions to perform.”
Katzenbach & Smith, 1993, p.21	A team is a small group of people (typically fewer than twenty) with complementary skills committed to a common purpose and a set of specific performance goals. Its members are committed to working with each other to achieve the team’s purpose and hold each other fully and jointly accountable for the team’s results.
Guzzo & Dickson, 1996, pp.308-309	A “work group” is made up of individuals who see themselves and who are seen by others as a social entity, who are interdependent because of the tasks they perform as members of a group, who are embedded in one or more larger social systems (e.g. community, organization), and who perform tasks that affect others (such as customers or coworkers).
Cohen & Bailey, 1997, p.241	“A team is a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems (for example, business unit or the corporation), and who manage their relationships across organizational boundaries.”
Kozlowski & Bell, 2003, p.334	“Work teams or groups are composed of two or more individuals who (a) exist to perform organizationally relevant tasks, (b) share one or more common goals, (c) interact socially, (d) exhibit task interdependencies (i.e., work flow, goals, outcomes), (e) maintain and manage boundaries, and (f) are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity”...
Salas et al., 2005, pp.559-562	“A team is two or more individuals with specified roles interacting adaptively, interdependently, and dynamically toward a common and valued goal (...). Teams do more than simply interact with tools; they require the ability to coordinate and cooperatively interact with each other to facilitate task objectives through a shared understanding of the team’s resources (e.g., members’ knowledge, skills, and experiences), the team’s goals and objectives, and the constraints under which the team works.”
Vecchio, 2006, p.212	“We can define a group as two or more people who interact with each other, share certain common beliefs, and view themselves as being members of a group.”

Despite differences in details, four factors seem to have gained wide acceptance among researchers: Workgroups consist of multiple individuals, share a common team identity (i.e.

recognize themselves and are being recognized by others as a group or team), interact with each other in order to execute a specific task that all members are collectively responsible for, and are embedded in a broader social and organizational context.

Multiple Individuals. While there is agreement between researchers that workgroups consist of multiple persons, differences in interpretations exist whether or not two persons (a dyad) suffice to form a group. Kozlowski and Bell (2003), Tannenbaum et al. (1992), Salas et al. (2005), and Vecchio (2006) include dyads as do most other definitions (Ilgen et al., 1993). However, it is argued from a socio-psychological perspective that several aspects of group dynamics (e.g. complex communication structures, coalitions, majority and minority constellations) require at least three persons to appear (Högl, 2005; Ilgen et al., 1993). Following their argumentation, this research defines teams as consisting of at least three members.

Common team identity. The characteristic of a common team identity indicates that the boundaries of a workgroup need to be confirmed from inside and outside (Alderfer, 1987). This is strongly represented in the definitions by Alderfer (1987) and Cohen (1997). Gomez et al. (2008) highlight the importance of not only identifying oneself as a member of a social group (and hence distinguishing oneself from non-members), but also of being identified by others as a member of a social group.

Tajfel (1982) defines the group by identity and identification. He combines a cognitive with an evaluative component that individuals identify as members of a group: a sense of awareness of group membership, and that the membership is valued.

The interaction of team members to execute a common task to arrive at a common goal relates to interdependencies between members. This becomes obvious in all definitions cited above. Teams are created for a task-oriented purpose (Ilgen et al., 1993). Interdependency implies that members not only cooperate with each other but also require inputs to their tasks from other team members according to the workflow (Kozlowski & Bell, 2003). The bigger, more complex and challenging team tasks are, the more important are close cooperation, synergy and coordination in order to unite interdependent actions (Hackman, 1987). Furthermore, the criterion of interaction between team members differentiates a team from multiple persons joining together only for social reasons (Ilgen et al., 1993). Brooks (2003) illustrates the interaction criterion by differentiating concert spectators from workgroups.

The embeddedness in a broader social and organizational context is characterized by technology, structure, leadership, culture, and climate that influence and constrain teams

(Kozlowski & Bell, 2003). As indicated in Kozlowski and Bell's (2003) definition, the organizational context furthermore influences exchanges with other units of the organization; thus, workgroups not only have interdependencies between members, but also with other entities of the broader organization in which they are embedded. As teams are created for task-oriented purposes (Ilgen et al., 1993), they are usually embedded in an organizational workflow in which the workgroup needs to fit to be able to contribute to the organization's overall goals (Gresov, 1989).

Collaboration in workgroups has been increasingly used within organizations (Ilgen, 1999; Mannix & Neale, 2005; Piña et al., 2008). From an organizational point of view, teamwork allows both specialization (by division of labour between individuals) and coordination. In this perspective workgroups can be considered as a "*hybrid organizational structure*" (Reger, 1997, p.85). They are a largely decentralised and little hierarchical means of organization that allows effective and local problem solving (George, 2007). Because of their relevance in contemporary organizations, workgroups are an often-studied phenomenon. Group effectiveness models constitute the underlying framework for studying and analysing cause and effect relationships within groups. The next subsection introduces multiple effectiveness models.

2.2 Group effectiveness models

Research on group performance aims at identifying factors that relate to desired group outcomes (Brodbeck, 2007b). In that regard, research has advanced from studying which factors predict team effectiveness to more complex questions about why some groups are more effective than others (Ilgen et al., 2005). The term effectiveness is used in this context as it encompasses more than performance or productive output (Sundstrom et al., 2000). A standard definition of group effectiveness has been provided by Hackman (1987, p.323) as a combination of the productive output of a workgroup, the capability of team members to cooperate in the future, and how team members' personal needs are satisfied by the teamwork.

In their review, Sundstrom et al. (2000) conclude that team effectiveness models generally incorporate five broad factors, which are (1) organizational context (e.g., training, reward systems, external environmental factors), (2) group composition and size (e.g., experience, abilities, diversity, stability, or tenure), (3) work design (e.g., equipment, task characteristics, autonomy, feedback, and goal setting), (4) intragroup processes (i.e., interactions and relationships between members, for instance communication, conflict, collaboration, roles, cohesion, social integration, and leader-member exchange), and (5) external group processes

(e.g., interaction with other groups, management, suppliers and customers, as well as external integration, coordination, and communication).

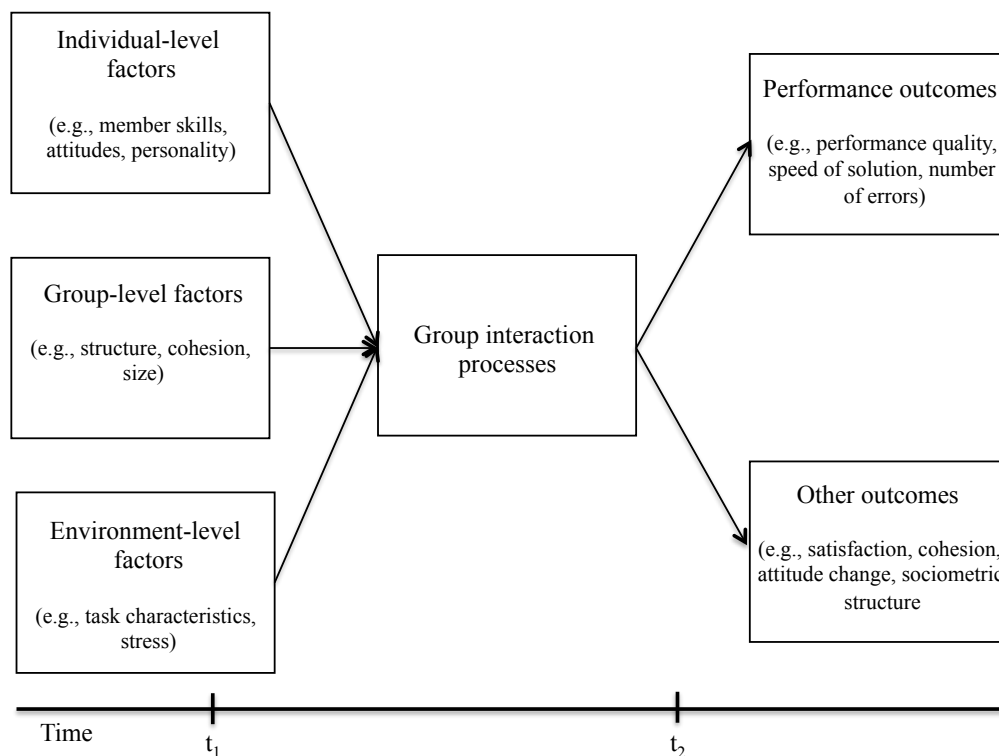
A wide range of different team effectiveness models have been introduced in the literature. A selection of most influential models will be introduced and their relevance for the present study will be discussed in this section.

2.2.1 McGrath's I-P-O-model of group effectiveness

McGrath (1964, p.71) introduced the widely cited input-process-output (I-P-O-) model of team performance and behaviour. Despite the age of the model, most current models of team performance and empirical research explicitly or implicitly integrate the basic notion of I-P-O from McGrath's model (Ilgen et al., 2005; Kozlowski & Bell, 2003).

The epistemological foundation for McGrath's (1964) model originates from general systems theory (Salas et al., 2007). In general, the I-P-O model highlights a nomological network of mediators and moderators as throughputs between input factors and team outcomes (Salas et al., 2007). The basic assumptions of the model are shown in Figure 4.

Figure 4: McGrath's (1964) model of group effectiveness (Hackman, 1987)



McGrath (1964) differentiates individual, group and environmental input factors to teamwork. Individual input factors may include a team member's abilities, personality, or attitudes. Group-level factors include e.g., the team structure, size or composition. Environmental factors may be the reward structure, task characteristics, and environmental turbulence. These input factors are considered to influence group interaction processes, which mediate team inputs and outputs.

Team processes are activities of members and their interactions as the group performs its task (McGrath, 1964, p.71). Thus, processes represent mechanisms that inhibit or enable team members to join their capabilities and actions (Kozlowski & Bell, 2003). Outputs are criteria along which the effectiveness of teams can be evaluated (Kozlowski & Bell, 2003). McGrath's model differentiates between task performance and effects on members (their abilities and attitudes) as output factors.

The advantage of McGrath's model is that it allows group comparisons to identify variables that influence group outputs. The input, process and output variables can be assessed at any point of time during the team cooperation, which allows to identify changes in the social system, as well as their antecedents and consequences (Hackman, 1987).

Hackman (1987, p.320) criticises the strict mediating role of team processes in McGrath's model. As alternative explanations, he introduces two conditions in which, first, input factors have a direct effect on group processes and group performance, and, second, input factors affect group performance directly and through the interaction between processes and performance.

Hackman (1987) concludes that group interaction processes serve as indicators how and how well a team works on its task. From analyzing how a team transforms the input factors into a joint group output, managers are able to identify measures to improve team performance. Second, Hackman (1987) concludes that interaction processes involve team synergies and process losses. These conclusions leads Hackman (1987) to move from a descriptive research rationale to a normative, managerial rationale, and to develop an own, normative model of group effectiveness.

The I-P-O model reflects the current state of art within the domain of team research (Salas et al., 2007). The relevance of McGrath's (1964) model for this research is twofold. First, it constitutes the theoretical basis for the IMOI model developed by Ilgen et al. (2005) that is described below and will be used as theoretical foundation for the present research. Second, McGrath's (1964) approach to classify variables in group research is advantageous for

structuring cause and effect relationships and, thus, for reviewing prior empirical work and developing theoretical models.

2.2.2 Hackman's normative model of group effectiveness

Hackman's (1987) model relies on the basic proposition that the overall effectiveness of a workgroup is a joint function of team members' efforts in carrying out the task, the amount of knowledge and skill they apply, and how appropriate the team's performance strategy is to the task. These three aspects are called "*process criteria of effectiveness*" (p.324). Not only do the process criteria help to predict the effectiveness of a workgroup, but they are considered as starting points to design and manage a group.

For managing workgroups, Hackman's model concentrates on three major points of leverage – the design of the workgroup, the organizational context in which the group operates, and group synergies resulting from the interaction of group members (Hackman, 1987).

The group design creates the conditions that allow groups to develop and retain task-effective behaviours. The design of a workgroup includes the structure of the task, the composition of the group, and the group norms about performance processes. The composition of the group is regarded as the major factor for the knowledge and skills a group has at its disposal for working on the task. In the normative model, Hackman (1987) suggests that team members need task-relevant and interpersonal skills, the team size should be large enough to carry out the task, and teams should exhibit a moderate degree of diversity.

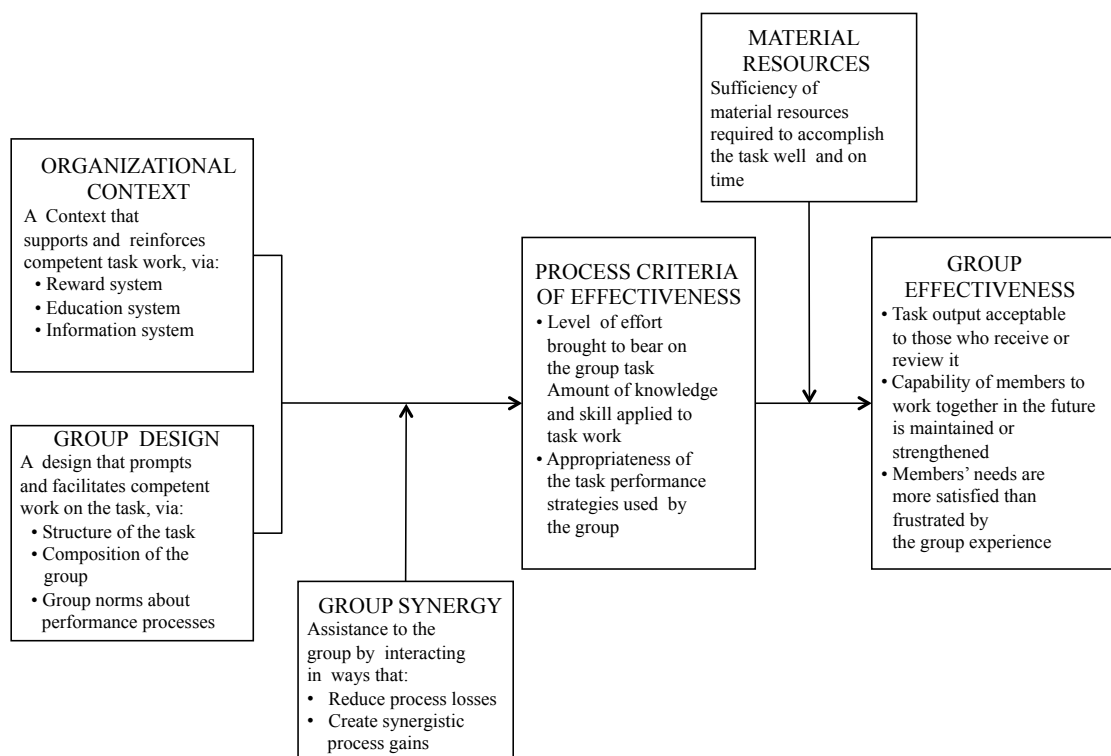
The organizational context in which a group operates determines the reward system, the education system, and the information system of the group (Hackman, 1987). The reward system should be designed to include challenging objectives, positive consequences for excellent performance, and promote group-level instead of individual-level rewards. The education system should provide additional assistance and training to a group when further experience from outside the group is required. Third, the organizational context should provide clear information about the situation and performance of the group, as well as potential outcomes of alternative strategies.

Group synergies exist when members' interactions reduce process losses and create process gains (Hackman, 1987). Process losses include motivation and coordination losses (Kerr & Tindale, 2004), as social loafing (Latane et al., 1979). They emerge when team members' contributions are inappropriately weighted, when a member's contribution may not be

recognized in congruence with the underlying expertise e.g. when he or she is discredited or silenced for demographic and other visible or deep-level characteristics.

Motivation gains have been found for social compensation and the “Köhler”-effect (Kerr & Tindale, 2004), describing increased efforts of members to compensate expected poor performance of others and of less capable members as they realize that the worst performance determines the overall group performance. Hackman (1987) additionally mentions collective learning in a group as another synergy gain. While process losses cause frictions when strategic plans are implemented, process gains involve new, creative and innovative ideas for solving problems or performing their task (Hackman, 1987). Hackman’s model (1987) is illustrated in Figure 5.

Figure 5: Hackman's (1987, p.331) normative model of group effectiveness



Hackman’s model contributes valuable insights for this thesis. It provides the theoretical basis for understanding effects of cultural diversity (understood as a factor of team design) and resulting team interactions, including the impact on team effectiveness. Diversity is explicitly mentioned in Hackman’s model as an important point of leverage to influence team processes and outcomes. Furthermore, Hackman’s model introduces the notion of how team design interacts with synergy gains or process losses in workgroups expected to influence the creativity and the attributed relevance of members’ contributions.

Hackman's (1987) model is criticised that it focuses on team outputs and members' capabilities and attitudes as criteria for team effectiveness, but neglects behavioural outcomes, as absenteeism, turnover, and safety (Cohen & Bailey, 1997). The strict indirect relationships between group design factors and effectiveness in McGrath's (1964) and Hackman's (1987) models is criticised (Cohen & Bailey, 1997; Ilgen et al., 2005). Moreover, the models largely focus their attention on factors that facilitate or hinder teamwork, as well as how they interrelate to influence team effectiveness (Salas et al., 2005), but forget to focus on what teamwork actually is. In the next section of this chapter, the model of Salas et al. (2005) will be introduced, which focuses on the components of teamwork to describe team effectiveness.

2.2.3 The "Big Five" of teamwork

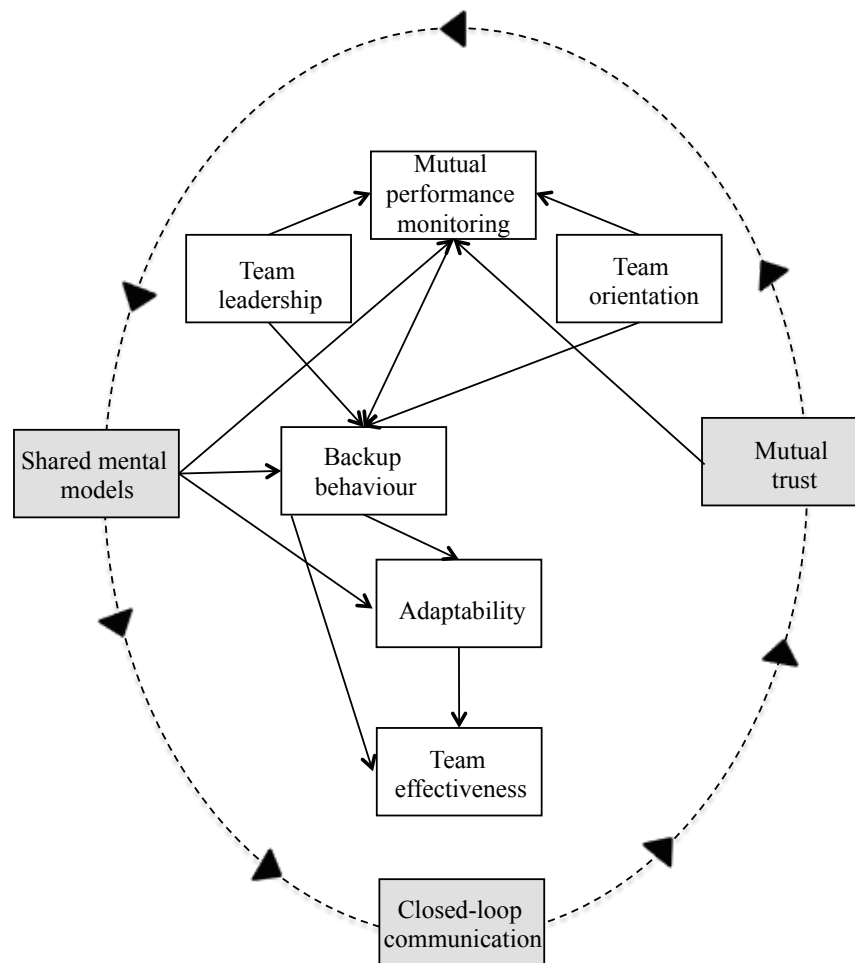
While most models of team effectiveness concentrate on factors that influence team effectiveness, which are usually organized across inputs, mediators and outcomes, the work of Salas and colleagues (2005, 2007) makes teamwork the focal point of interest. Besides taskwork (i.e. the interaction with the task and tools to fulfil the task), teams require teamwork that determines to which degree teams reach their full potential and are successful in their work (Salas et al., 2005). They define teamwork in contrast to taskwork as a "*set of interrelated thoughts, actions, and feelings of each team member that are needed to function as a team and that combine to facilitate coordinated, adaptive performance and task objectives resulting in value-added outcomes*" (p. 562).

Based on an extensive review of teamwork models, Salas et al. (2005) thematically cluster variables that compose the core dimensions of teamwork, labelled as the "Big Five". The five components, team leadership, mutual performance monitoring, backup behaviour, adaptability, and team orientation are facilitated by three supporting and coordinating mechanisms. The support mechanisms include a shared mental model, achievement of mutual trust, and the engagement in closed-loop communication. Their framework and the relationships are depicted in Figure 6.

Essentially, their model suggests that team leaders influence team effectiveness by setting performance expectations that team members to monitor their mates' performance and to provide backup. When team members use to monitor each others' performance, team effectiveness is increased since members can react upon their colleagues' deficits by backup behaviour. Backup behaviour is considered to have a direct effect on team effectiveness, when team members jump in to complete the task and indirectly through an increased

adaptability to changes in the team and its environment. Adaptability directly affects team performance as it allows identifying deviations between actual and desired outcomes and a subsequent readjustment of action strategies. Team orientation, in turn, indirectly affects team effectiveness through the willingness and ability to engage in performance monitoring and through the acceptability of feedback or assistance from backup behaviour (Salas et al., 2005).

Figure 6: Relationships among Big Five of teamwork and their coordinating mechanisms (Salas et al., 2005, p.571)



Mutual performance monitoring, effective backup behaviour and adaptability require a common understanding of the team goals, associated tasks, coordination mechanisms, and external environments, or in other words, a shared mental model (Salas et al., 2005). Furthermore, only when team members trust each other, they will perceive the mutual performance monitoring as a benevolent behaviour aimed at effectively cooperating and helping each other. The third support mechanism, closed-loop communication, involves sending, receiving and interpreting messages, as well as assuring that the intended message

was received. Closed-loop communication is a fundamental processes, for instance to develop and share knowledge, to coordinate activities, or to develop a shared mental model and a common vocabulary (Salas et al., 2005).

Salas et al. (2005), instead of including a set of influencing factors on team effectiveness, build their model on dimensions that they claim to be components of teamwork. With this approach, they criticise the number and inconsistency of factors included in previously described models of team effectiveness (e.g., McGrath, 1964; Hackman, 1987) that confuse researchers and practitioners. They condense in their framework the insights from more than 138 models of team effectiveness. Although focusing on the five dimensions, another advantage of Salas et al.'s model relies in the dynamic assumption of teamwork (Salas et al., 2005). For instance, the importance of single dimensions of teamwork is seen as contingent from the task type and stage of team development. Team leadership and team orientation may be more relevant in the initial phases of team development when tasks and responsibilities, as well as roles of team members need to be defined.

Salas et al.'s model (2005) has several implications for the present research. First, it explicitly highlights the importance of team orientation in diverse teams to facilitate the acceptance of feedback and assistance from team mates. Second, their framework influences the selection of variables included in the empirical investigation of the present research. Adaptability was suggested to directly influence team effectiveness, and seemed particularly relevant for dynamic and innovative team tasks. Consequently, the very similar construct of team reflexivity was included for empirical investigation. Furthermore, as team communication has a prominent position within the framework and is considered to facilitate all components of teamwork, mediating effects of communication were also investigated. Eventually, the interplay between the various components of teamwork and their ancillary dimensions will be used to interpret and discuss findings of the present research study.

A downside of Salas et al.'s (2005) model in the context of the present research is the lacking foundation within system theory. Therefore, the model does not permit to present cause and effects within a nomological network, as do I-P-O models. Consequently, the theoretical and empirical models in the present thesis better fit within an I-P-O framework, and the next section describes how Ilgen et al. (2005) revised such frameworks with their IMOI-model.

2.2.4 The IMOI-model of group effectiveness

Ilgen et al. (2005) build their model on McGrath's (1964) I-P-O model, but react to criticism and developments from more recent team effectiveness research. The authors criticise the I-P-O model for not being able to capture the complex nature of teams as dynamic social systems (Ilgen et al., 2005). Three deficiencies have been identified that limit the use of the I-P-O model for current conceptualizations of teams and associated empirical research. First, the P for "process" in McGrath's model implies that mediating factors are predominantly team processes; however, research has increasingly included teams' cognitive and affective states (Ilgen et al., 2005). The models' focus on processes does not embrace the expanded set of group-level variables from more recent research.

Second, it is criticised that the linear path from inputs to outcomes neglects that team outputs are as well inputs to future team processes, although classic work has already explicitly specified feedback loops (Ilgen et al., 2005). Third, it has been criticised that the I-P-O model suggests a progression of effects from the input-level to the process-level and further to the output-level. Modern complex team models include interaction effects between various inputs and mediators, between processes and emergent states, and between inputs, processes and emergent states.

As consequences of this criticism, Ilgen et al. (2005) propose an IMOI model that substitutes the "process" for "mediator" and includes another "input" at the end to emphasize the idea of cyclical causal feedbacks. Furthermore, the elimination of the hyphen between the letters implies not only linear, but also nonlinear relationships between them.

Acknowledging the contribution of McGrath's (1964) model, the current research on culturally diverse teamwork builds on the IMOI-model for developing the nomological network of variables that are used to explain workgroup effectiveness. The IMOI-model is a suitable frame of reference, where cultural and national diversity are seen as inputs, team processes as mediators, and creativity and innovativeness as team outcomes. Furthermore, the relations assumed and tested in the models are complex, dynamic and interacting. In contrast to earlier models of team effectiveness, the IMOI-model was designed to account for such relationships.

2.3 Differentiating different forms of groups

Workgroups are a quite broadly defined phenomenon (see above). Therefore, researchers have undertaken endeavours to distinguish different types of teams, of which some major types will be introduced in this section.

2.3.1 Traditional forms of workgroups

Sundstrom et al. (2000) build on work by Hackman (1990), Sundstrom et al. (1990), and Cohen and Bailey (1997) to identify six different kinds of workgroups as commonly distinguished in literature, which are (1) production groups, (2) service groups, (3) management teams, (4) project groups, (5) action and performing groups, and (6) advisory groups.

Production groups consist of front-line workers who produce tangible products and vary based on their degree of autonomy from supervisory-led to semi-autonomous to self-directed (also called “self-regulated or self-managing”) workgroups (Kozlowski & Bell, 2003; Sundstrom et al., 2000). *Service teams* engage in frequent interactions with customers (Sundstrom et al., 2000). In contrast to production teams, customer service requirements usually differ which makes the transaction between teams and customers variable (Kozlowski & Bell, 2003). Similar to production groups, service groups have different degrees of autonomy and may be self-managing (Sundstrom et al., 2000). *Management teams* consist of senior or top managers and of their management staff (Sundstrom et al., 2000). The purpose of management teams is to coordinate and direct lower level units (Kozlowski & Bell, 2003). Usually, management teams have responsibility for a business unit, or consist of the executive management team (usually referred to as top management team – TMT) (Cohen & Bailey, 1997). *Project groups* are built for time-limited cooperations to produce one-time outputs to non-repetitive tasks that usually require significant application of knowledge, judgement or expertise (Cohen & Bailey, 1997). Project teams are typically assembled for new product developments (Kozlowski & Bell, 2003). *Action and performing groups* conduct time-limited, complex performance events and consist of expert members with different roles. Examples for action and performing groups include aircrews, surgical teams, musicians, and investigative units (Kozlowski & Bell, 2003; Sundstrom et al., 2000). Action groups also include negotiation teams for contracts, transition teams for mergers and acquisitions, and entrepreneurial start-up teams (Sundstrom et al., 1990). Lastly, *advisory groups* (also called “parallel groups”, (c.f., Cohen & Bailey, 1997)) work outside of and parallel to production processes and are built for problem-solving and improvement-oriented activities, as e.g. in quality circles, or employee involvement groups (Cohen & Bailey, 1997).

Besides these rather traditional forms of workgroups, literature has introduced newer forms of workgroups to capture the phenomenon of international cooperation (Kozlowski & Bell, 2003). These newer forms will be introduced in the following section.

2.3.2 Newer forms of workgroups

In addition to these classical differentiations of team types, Kozlowski and Bell (2003) point to various newer team forms that have emerged due to the changed nature of organizations and work in globalized economies. These newer forms of teams aim to capture the phenomenon of international cooperation (Högl, 2005). Among those that are mostly discussed in the literature are the concepts of (1) “geographically-dispersed teams” (also “distributed teams”, “geographically-distributed teams”), (2) “virtual teams”, and (3) “global teams” (also “international teams”, “cross-national teams”, and “intercultural or cross-cultural teams”). These key concepts are partly related and overlapping.

The concept of **geographically dispersed teams** in the basic perception considers where team members are physically located and conduct their work necessary in order to fulfil the team’s task (McDonogh et al., 2001; Rafii, 1995). Dispersed teams can be considered as the opposite to “traditional” or collocated teams (Hinds & Bailey, 2003). Due to the geographical dispersion of team members over different (often international) company sites, geographically-dispersed teams are also often (at least implicitly) considered to exhibit a certain degree of cultural diversity (Hinds & Bailey, 2003; McDonogh et al., 2001; Müthel et al., 2012; Polzer et al., 2006).

The dispersion of team members is said to have various effects on team processes and effectiveness. In his seminal work, Allen (1977) has shown a logarithmic relationship between the probability of communication between two employees and their physical distance. The higher the physical distance between two people, the less they are likely to communicate with each other. Högl and Proserpio (2004) affirmed this effect more recently. It is suggested that the decrease of communication is not only due to the decreased likelihood of contact between people in dispersed teams, but also from underlying, often unconscious processes. Team members are considered as being more responsive to “near” colleagues (Latane et al., 1995), which is reinforced by social similarity, shared values and expectations (McDonogh et al., 2001), increased cohesion, mutual support (Högl & Proserpio, 2004) and less conflict (Rafii, 1995). Contrary to collocated teams, dispersed teams are considered as having difficulties in establishing a common shared context resulting in different perspectives and norms (Hinds & Bailey, 2003).

Polzer et al. (2006) found that geographical dispersion of team members contributes to creating group faultlines (see Chapter 4.2.3). Negative consequences may be diminishing cross-subgroup communication and coordination, resulting in redundant work, conflict,

uneven participation and identification, and underlying social categorization processes (Högl & Proserpio, 2004; Polzer et al., 2006). Similarly, Hinds and Mortensen (2005) observe higher task and relationship conflicts between members of distributed teams which are moderated by shared identity and shared context.

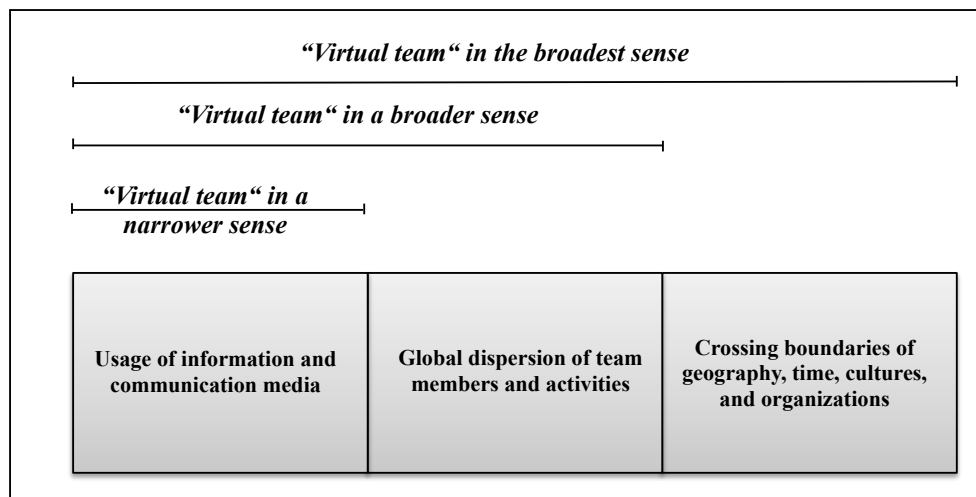
On the other hand, dispersed teams are said to contribute to combining resources and competencies across boundaries of space allowing for knowledge integration and team learning (Sole & Edmondson, 2002). Similarly, Crampton and Hinds (2004) hypothesize that dispersed teams may benefit from increased cross-national learning.

Virtual teams go back to the introduction of telework in business environments (Hertel et al., 2005). The concept focuses on media used for interaction between members. As Hertel et al. (2005) point out, the attribute “virtual” refers to a predominant use of electronic information and communication technology (ICT) in the interaction between team members. The reliance on ICT is shared in all relevant definitions of virtual teams (e.g., Jarvenpaa & Leidner, 2006; Maznevski & Chudoba, 2000; Walther & Bunz, 2005). Kerr and Tindale (2004) refer to this type of groups as “electronic groups” based on the reliance on electronic media.

More recent extensions of the concept have led to multiple differences in the notions of virtual teams between various authors. Those differences concern the geographical dispersion of team members, and additional characteristics of virtual teams. For dispersed team members to successfully cooperate and interact with each other, the usage of electronic information and communication media is nowadays inevitable. For that reason, a stream of literature has combined the criteria of “physical location” and “virtuality” to study “global virtual teams” or “multinational virtual teams” (e.g., Bell & Kozlowski, 2002; Jarvenpaa & Leidner, 2006; Maznevski & Chudoba, 2000; Van Ryssen & Godar, 2000). Other authors perceive virtual teams as necessarily being dispersed (e.g., Bell & Kozlowski, 2002; McDonogh et al., 2001; Walther & Bunz, 2005), and thus consider them as the opposite to “traditional” or “face-to-face” teams. Martins et al. (2004), however, found that researchers have gradually moved away from this perspective since in collocated teams it is nowadays also common to use ICT as a means for communication and collaboration. Moreover, predominantly virtual teams (i.e. teams that rely on ICT as major means for collaboration and communication) often have at least some face-to-face contact (Hertel et al., 2005), e.g., in form of regular brief meetings. For these reasons, a dichotomous conceptualization of virtual contrary traditional face-to-face teams is considered as inappropriate, and that “virtuality” is best recognized as a dimensional characteristic of all teams (e.g., Bell & Kozlowski, 2002; Martins et al., 2004).

The second difference in the conceptualization of virtual teams concerns additional characteristics as side effects of the electronically-enabled communication and collaboration. The most commonly studied “side-effects” include the crossing of boundaries of time, cultures, company sites, and organizations (Jarvenpaa & Leidner, 2006; Martins et al., 2004). Time differences occur due to the asynchrony of communication prevailing in some ICT-media (e.g., Email) (Bell & Kozlowski, 2002), and by different time zones (Hertel et al., 2005; Kayworth & Leidner, 2000). Global dispersion of team member on different company sites is considered to bring about the team compositional effect of cultural diversity (Jarvenpaa & Leidner, 2006; Kankanhalli et al., 2007). These additional characteristics extend the conceptualization of virtual teamwork as depicted in Figure 7.

Figure 7: Overview of different conceptualizations of virtual teams



While acknowledging that virtuality in teamwork may be aligned with additional characteristics of global dispersion, cultural diversity, and crossing boundaries of time, virtuality is understood in this thesis in a narrow sense and according to Hertel et al. (2005) as a team-level characteristic describing the degree to which ICT media are used in communication and collaboration between members.

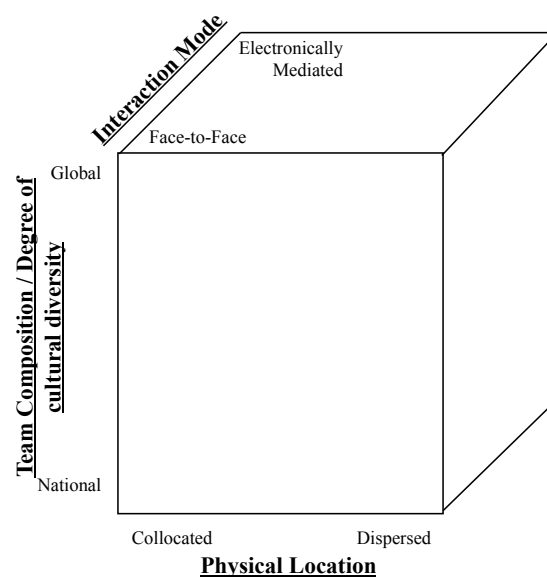
The third concept in newer forms of teamwork is related to team composition. **Global teams**, or “international”, “cross-border”, “transnational”, “multinational” and “cross-national” teams, are used to describe similar or at least closely related team concepts. There is wide consent across definitions that the decisive factor to constitute a “global team” is that team composition is characterized by differences in nationalities between members, involving a degree of cultural diversity (e.g., Adenfelt & Lagerström, 2008; Barczak &

McDonough, 2003; Janssens, 2006; Lagerström & Andersson, 2003; Monalisa et al., 2008; Puck et al., 2008; Schweiger et al., 2003; Shapiro et al., 2002).

Divergence in concepts exist again regarding additional characteristics of global teams. Some researchers have melded the compositional aspect by a locational dimension of global dispersion (e.g., Adenfelt & Lagerström, 2008; Barczak & McDonough, 2003; Monalisa et al., 2008; Schweiger et al., 2003). Others include a necessary or typical degree of virtuality into their definitions (Schweiger et al., 2003; Shapiro et al., 2002). In this research, it is acknowledged that in practice global teams are often geographically dispersed and communicate through various electronic media. However, from an analytical point of view, it makes sense to discern the different influences from each dimension. Therefore, this research considers the international team composition as the defining characteristic of global teamwork. This notion entails that international, cross-national, cross-cultural, cross-border and global teams include members with different cultural backgrounds, i.e. cultural diversity in the team (Salmi, 2010).

The three newer forms of teamwork can be regarded as dimensions of team design. Because of the discussed strong overlaps of dimensions across various definitions, this research builds on a cube to discern the three dimensions of newer forms of teamwork (Jarvenpaa & Leidner, 2006), which is shown in Figure 8.

Figure 8: Dimensions of newer forms of teamwork (adapted from Jarvenpaa & Leidner, 2006)



The cube combines the notion that newer forms of teamwork include varying degrees of international or global team compositions, virtual interaction modes, and cooperation across different physical locations. Much research has been conducted with combined characteristics, and the combination of global virtual teams has been most often studied (Connaughton & Shuffler, 2007) (e.g., Daim et al., 2012; Gibbs, 2009; Harvey & Griffith, 2007; Harvey et al., 2005; Jarvenpaa & Leidner, 2006; Kayworth & Leidner, 2000; Zimmermann, 2011).

2.4 Implications for the present research

As teamwork has become increasingly common and relevant in organizations, various models for team effectiveness have been introduced to capture cause and effect relationships between input-level, mediating-level, and outcome-level variables. Several influential models have been discussed and the IMOI-model has been identified as most suitable for the purpose of the present study.

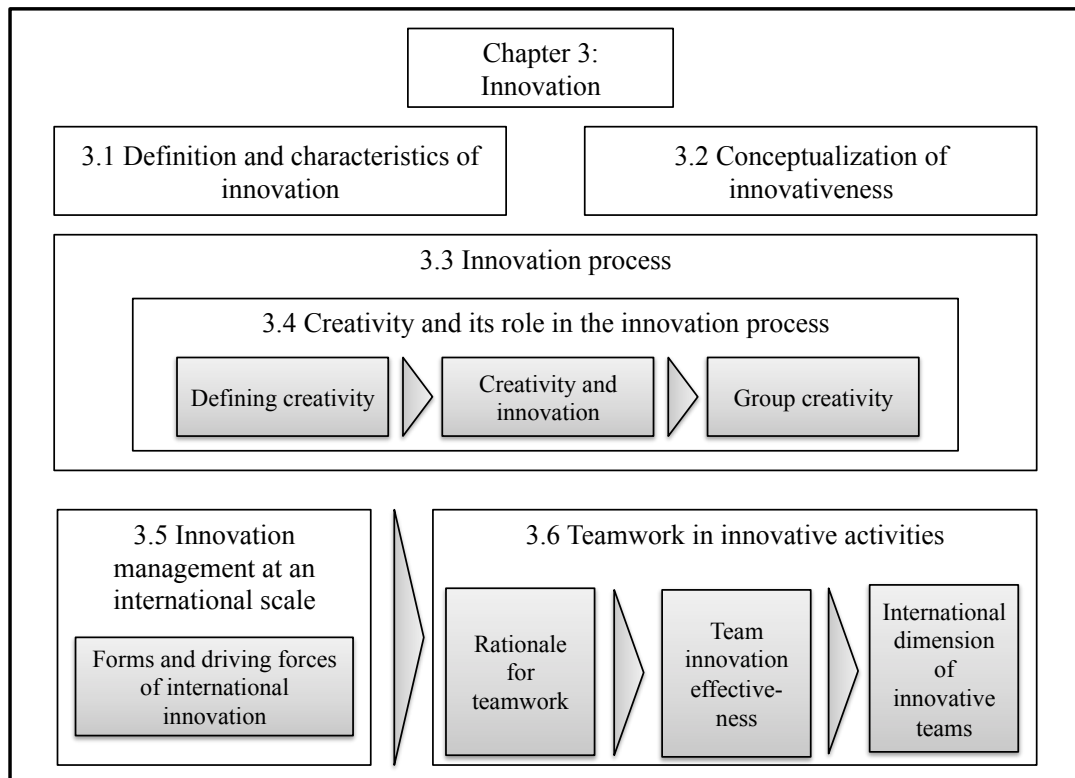
Besides traditional types of workgroups, several newer forms and their characteristics have been introduced, all of which highlight the relevance of cultural diversity in teams. Whether teamwork is considered as (globally) dispersed, virtual, transnational, or a combination of these perspectives, cultural diversity among team members is a widely acknowledged phenomenon that influences how these teams cooperate and perform.

Referring to the dimensions of newer forms of teamwork in Figure 8, this research focuses only on the single dimension of cultural diversity brought about by an international composition of teams. Therefore, it is beyond the scope of this thesis to provide a complete review of the effects from global dispersion, the use of virtual communication practices, and international team composition on team processes and effectiveness. Only with regard to international innovation activities, selective results from research on global, virtual and dispersed teamwork will be reviewed (see below). Furthermore, insights from global teams will be integrated when developing hypotheses on the effects of cultural diversity. Before introducing theoretical foundations of cultural diversity, the next section deals with innovation and innovativeness to introduce the specific context in which culturally diverse teams are studied.

3. Innovation and innovativeness

This chapter aims at introducing and interpreting the relevant fields of literature on innovation, creativity and international teamwork in innovative activities. It includes definitions of necessary termini and introduces the specific context for this research. The international cooperation in innovative activities, combined with an increasing reliance on teamwork implies a necessity of culturally diverse teams to be creative and innovative. The main contents and outline of this chapter are depicted in Figure 9.

Figure 9: Outline and contents of the third chapter



3.1 Defining innovation

The term innovation is defined and conceptualized in many different ways. For that reason, the OECD introduced the Oslo Manual (2005) which aims at setting a standard for defining innovation:

“An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.” (p.46)

As many other definitions of innovation, the OECD shares the notion of novelty, improvement and reference to markets. Novelty is a necessary characteristic of an innovation (OECD, 2005) describing whether an innovation has been already implemented by others. Following Nelson (1992) and the OECD (2005), the minimum requirement for meeting the criterion of novelty is that it is new to the respective firm. This wide definition may cause difficulties, because something that is new to one firm might already be established in the market by another firm. As Fagerberg (2005, p.8) puts it *“there is a qualitative difference between (a) commercializing something for the first time and (b) copying it and introducing it in a different context”*. The context in which an innovation is conceived and introduced is decisive and relates to the respective market. The degree of novelty can be seen as dimensional, ranging from “new to the world” (first introduction of the innovation on all markets and industries, domestic and international), over “new to the market” (first introduction of a firm in its market) to “new to the firm” (already implemented by other firms in the market) (OECD, 2005, p.57).

A second characteristic of innovations is the “extent of the change”, i.e., how different the innovation is from previous solutions (Henderson & Clark, 1990). Similar to the characteristic of novelty, the extent of change is seen as dimensional and ranges from keeping the core concept of a solution unchanged to throwing it over. Henderson and Clark’s (1990) model includes a second dimension, the type of change that considers the relationship between the components of a (technological) solution. Combining both dimensions allows differentiating between radical, incremental, architectural, and modular innovations. Incremental innovations adapt only the core concept of a product or solution, leaving the relationship between the core concept and the components unchanged (Henderson & Clark, 1990). Radical innovations, on the contrary, “overturn” the core concept and change the linkages with the components (Henderson & Clark, 1990).

The bi-dimensional differentiation between types of innovation, however, is not generally accepted. The OECD (2005, p.29) applies the uni-dimensional criterion of “extent of

change” to differentiate between radical (major disruptive changes) and incremental (smaller improvements) innovations. Because the OECD Oslo Manual has gained wide acceptance, this notion is followed in the present research.

Katila and Ahuja (2002) see a relationship between the degree of change and the novelty of knowledge. While incremental innovations largely rely on the exploitation of existing knowledge, radical innovations are considered to depend on the exploration of new knowledge (Katila & Ahuja, 2002). For radical innovations, risks and uncertainties are high as are the opportunities (Hill & Rothaermel, 2003). Radical innovations bear the potential of “disrupting” industry dynamics by changing market structures, creating entirely new markets, and rendering existing solutions obsolete (Christensen & Overdorf, 2000; Hill & Rothaermel, 2003). For that reason, they are sometimes also referred to as “disruptive innovations”.

Conceptually, it implies that a further characteristic of an innovation resides in the impact of the innovation on the market. The reference to markets is implicitly integrated in the OECD (2005) definition (see above). It differentiates between an invention and an innovation. An innovation can be considered as the economic usage of an invention in the market which allows firms to establish temporary monopolies and earn economic rents for a certain period of time (Gerybadze, 2004). Even absolutely new and radically changed inventions may never become innovations, as this requires a (successful) introduction in the market (Brockhoff, 1999). The impact on the market can be studied from a macro- and a micro- perspective. The macro-perspective involves impacts on the market structure and on the economic activities of actors in the market, for instance by creating entirely new markets, or by rendering existing products and solutions obsolete (OECD, 2005). On a micro-level, the impact can be described by performance improvements for the firm and benefits for the customer. The micro-level implies therefore e.g., the sales potential or overall attractiveness of an innovation (Franke et al., 2006b). The characteristics of innovations have been used to conceptualize innovativeness at various levels (see below).

Besides these “defining characteristics” of innovations, innovation projects are often described as associated with high degrees of uncertainty, complexity and possibility of conflict (e.g., Vahs & Burmester, 2005). Related to the creation of a novelty is always the uncertainty regarding the outcomes or success (e.g., Fagerberg, 2005, p.10). Uncertainty involves a technical and market uncertainty (Archibugi & Iammarino, 1999; Edmondson & Nemhard, 2009). Firms have specific goals when developing an invention and introducing it on the market. Beforehand, it is uncertain whether the defined goals can be reached with

the innovation. Furthermore, the critical success factors, technological performance, costs and time to market remain uncertain.

Innovations are furthermore complex in the sense that the structure of the problem that needs to be solved is foremost unknown (Vahs & Burmester, 2005). For that reason, the problem needs to be systematized, captured and understood at large, requiring an analysis from different angles. The complexity is further intensified by an “explosion” and rapid evolution of technological knowledge, as well as the fusion of formerly separated technologies (Edmondson & Nembhard, 2009; Gassmann & Bader, 2007). This brings about the involvement of many different and specialized persons and organizational entities that need to be coordinated (Fagerberg, 2005).

Innovations also involve a high possibility of conflict internally and between firms and external stakeholders. Internally, the conflict may be due to entities involved in the process that follow different and possibly contradictory goals (Herstatt & Verworn, 2007). Externally and internally, interest groups or entities affected by the innovation may resist the introduction of an innovation in the market if they fear their interests, market positions, or values will be harmed.

Having defined innovation and described the related characteristics, the next section introduces the concept of innovativeness as a measure that has been applied in research to capture innovation at different levels.

3.2 Conceptualizing innovativeness

Innovativeness can be understood on different levels, as e.g. firm innovativeness and the innovativeness of a product (Garcia & Calantone, 2002). Firm innovativeness usually implies the probability of a firm to innovate but has also been used to define the propensity that a firm adopts innovations (Garcia & Calantone, 2002). Vazquez et al. (2001) perceive firm innovativeness as a firm’s innovative outputs and predisposition to innovate. The output includes the innovation rate (average number of commercialized innovations in 5 years) and the innovations’ degrees of novelty (see above).

On the other hand, innovativeness has often been used to describe the quality of an innovation (e.g., West & Hirst, 2005, p.258). The argument for conceptualizing product or service innovativeness stems from empirical investigations that have related innovativeness to the performance of a product or service (e.g., Lilien et al., 2002; Talke et al., 2009). From

this perspective, researchers often draw on the defining characteristics of innovations (as outlined above) to analyse to what degree a product or service, a process, an organizational or marketing method meets them - and hence, can be described as “innovative”. In this sense, product innovativeness is seen as a multi-dimensional construct (Talke et al., 2009)

West and Hirst (2005) suggests a construction of product innovativeness based on *radicalness*, *magnitude*, *novelty* and *effectiveness*. Radicalness refers to the extent of change of the innovation, and the magnitude describes the extent of the consequences for instance on the market (macro impact). Novelty refers to the question of how new the changes are. Finally, effectiveness refers to the internal improvement along various tasks and according to customers’ perception (micro impact) (Borrill et al., 2000; West & Anderson, 1996).

Other authors use different, yet related measures to assess the quality of an innovation. For instance, Franke et al. (2006b) use ratings of originality, novelty of idea, benefit for market, sales potential and overall attractiveness. Garcia and Calatone (2002) systematically review the literature on operationalizations of innovativeness and find that it is frequently used as a synonym for the degree of novelty (p.112). The authors maintain, however, that product innovativeness needs to include the discontinuity of a product or service (extent of change), as well as macro and micro perspectives of the outcomes from introducing it into the market (p.113). In their view, the macro perspective describes the capacity to create a paradigm shift in technology or market structure in an industry, while the micro perspective relates to the development of new resources, capabilities or strategies of a firm. They find that product innovativeness was most often modelled as a multidimensional reflective variable (p.119). The authors suggest conceptualizing innovativeness as a second-order, formative construct (p.124).

Focusing on technological innovations, Garcia and Calantone (2002) mention that technological innovations may originate from marketing directions or technological progress. Consequently, they differentiate in their model between marketing and technological discontinuity (pp.121-124).

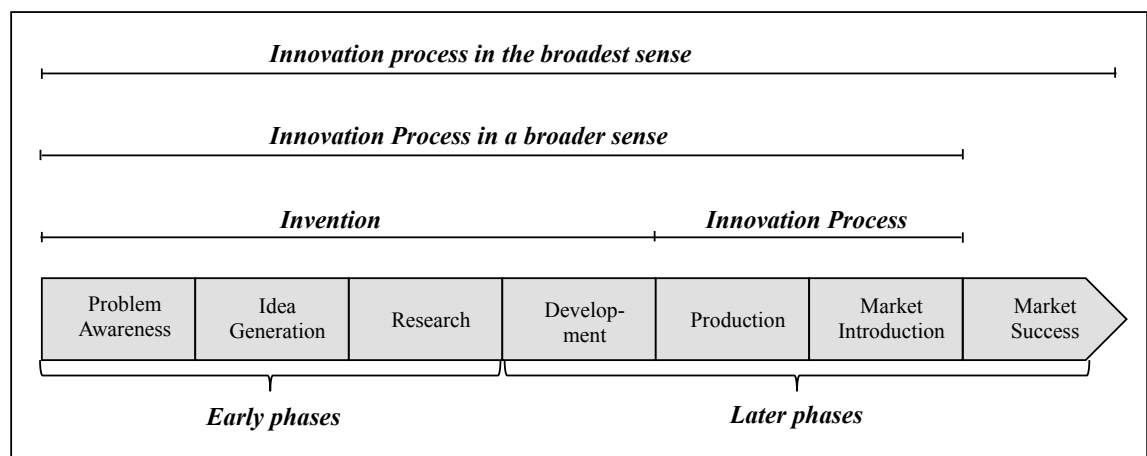
Many studies have in common that they work with multiple subjective ratings, usually evaluated by multiple experts. West and Anderson (1996) argue referring to Amabile (1983) that truly objective measurements are impossible to find and suggest the use of subjective criteria which can be consensually validated.

3.3 Innovation process

The management of innovations can be understood as a goal-oriented process to build resources and competences and integrate these into products and services in order to strengthen the market and financial position of a firm (Gerybadze, 2004). This (managerial) process consists of both decision-making and assertion. In order to successfully generate and introduce an innovation in the market, various underlying activities have to be conducted along the innovation process.

The activities involve scientific, technological, organizational, financial, and commercial activities (OECD, 2005), including in most cases research and development (R&D). R&D covers a part of the innovation activities, but is accompanied by other activities as e.g., patenting, market introduction, and financing. The innovation process covers (in the broadest sense) all activities and phases from problem awareness to successful market implementation (see Figure 10) (Sammerl, 2006).

Figure 10: Different conceptualizations of the innovation process (adapted from Sammerl, 2006; Herstatt & Verworn, 2007)



The innovation process can be separated into early and later phases (Herstatt & Verworn, 2007). The early phases cover all activities from problem awareness and concept development until the execution of one solution, often initiated by a top management decision. Similarly, Sivakumar and Nakata (2003) split up the innovation process into two blocks of “initiation”, which covers the phases of idea generation, screening and concept development, and “implementation”, covering the phases of design, test marketing, and market introduction.

It is often highlighted that the early phases require a high degree of creativity (West, 2002a). Furthermore, they are characterized by a high degree of uncertainty, need for cross-

functional and international cooperation, and a lack of management attention and support (Herstatt & Verworn, 2007).

The distinction between these phases is useful as huge differences exist between them. Major influencing factors on the innovation success are determined within concept development and thus in the early phases. Estimates range between 75 to 85 percent of the total lifecycle costs, 80 percent of the milestones of the project and 70 percent of the quality factors of an innovation being determined in the early phases, compared with only between 5 to 7 percent of the costs realized within this period (Bürgel & Zellner, 1997; Cooper & Slagmulder, 2004).

Furthermore, different success criteria for innovative teams exist in early and later phases (Högl, 2005). The early phases with problem recognition and the generation of creative ideas and solutions are of utmost importance as they constitute the first steps of and valuable inputs into the innovation process.

The following phases of the goal-oriented process are also important because they involve decision-making and assertion in which the creative idea is adapted to the organizational context and stabilized (West, 2002a). In this perspective, the evaluation and selection processes are critical to the success of innovation, because rejecting a valuable solution and selecting a disadvantageous one both represent a failure of the innovation process in teams (West, 2002b). Therefore, Herstatt and Verworn (2007) state that the early phases of the innovation process end at the point where a decision is made whether or not a concept will be enacted into an innovation.

In an entrepreneurship context, but also in management contexts, the early phases of the innovation process often involve the development of a business plan. A business plan is considered as an important management tool, not only for new ventures (Karlsson & Honig, 2009), but also for established firms. The quality of a written business plan is considered as an important indicator of a venture's potential for success (Chen et al., 2009a). Therefore, the initial assessment of a business plan is decisive for the project's future fate (Franke et al., 2006a). Furthermore, research has suggested that the presentation of the business plan is a persuasion process for investment decisions (Chen et al., 2009a).

The distinction of differences between the early and later phases of the innovation allows several implications for the present research. First, the scope of the research in this thesis is constrained to the early phases. Covering the entire innovation process would require a longitudinal design that was not applicable. The business plan and therewith the end of the early, conceptual phases of the innovation process constitute a landmark point within the

entire process. This point was chosen to conduct the present research, and later phases (although very relevant for the implementation of an innovation, c.f. West, 2002b) could not be covered. Furthermore, working with a sample of entrepreneurial student teams (see details and arguments below in Chapter 7.2), allowed only covering these early phases in the team-based project.

Because of the high relevance of creativity within the early phases of the innovation process, the next subsection describes creativity in more detail.

3.4 Creativity and its role in the innovation process

3.4.1 Defining creativity

Creativity – in a basic sense – involves the generation of creative ideas (Simonton, 2008, p.680). For ideas to be named “creative”, two prerequisites must be met: originality and adaptiveness (Simonton, 2008). Originality involves a new or uncommon idea, while adaptiveness describes that an idea solves a problem or helps to achieve an important goal. Similarly, other researchers describe the defining elements of creativity as usefulness and novelty (George, 2007; Mumford & Gustafson, 1988; Unsworth, 2001). Usefulness implies that an idea or product yields a potential value, when it is implemented into an innovation (George, 2007, p.441) and possibly increases effectiveness or efficiency. Novelty stands for an idea being unusual, unique, varied, original, and breaking from existing patterns.

Simonton (2008) and Hennessey and Amabile (2010) describe that the agreement among researchers ends at that basic and abstract conception of creativity. Beyond that abstract notion of creativity, perspectives deviate because there are various paths to investigate the emergence of creative ideas. Simonton (2008) specifies that creativity can be seen as a process, as a characteristic of a product or as a personality trait.

Organizational scholars have increasingly studied creativity in the workplace and how the environment influences creative processes (Hennessey & Amabile, 2010). They have repeatedly found that individual creativity is enacted within an environmental context (e.g., Cummings & Oldham, 1997; Elsbach & Hargadon, 2006; Hirst et al., 2009). A review article by George (2007) has well documented the progress of that area of creativity research. For these reasons, the present research adopts the environmental approach to study how creative ideas are generated. It ties in with one of the more active areas in organizational creativity research in the past years (Hennessey & Amabile, 2010) and studies how diversity,

or more precisely cultural diversity, nurtures or constrains the creative potential of people. The literature on cultural diversity and creativity will be reviewed below (Section 5.4.1).

The construct of creativity has been widely discussed in psychological literature in contrast to intelligence and convergent thinking (Davis, 1989; Guilford, 1950; Kim, 2008a; Kogan, 2008). A meta-analysis by Kim (2008b) revealed that divergent thinking tests predict creative achievement better than intelligence tests, supporting the notion that divergent thinking and intelligence or convergent thinking are separate constructs (Kim, 2008a). This research adheres to the conclusion provided by Silvia et al. (2008) that measurements of divergent thinking are most promising to assess differences in creative abilities.

The concept of divergent thinking has been originally introduced by Guilford (1950). Divergent thinking can be defined as an ability to generate multiple possible solutions to a problem (Mumford & Gustafson, 1988, p.32). For that reason, divergent thinking is widely assessed by output factors that include a quantity factor of *fluency* (number of ideas generated), as well as factors to assess the creative quality of responses comprising *flexibility* (variety of categories or shifts in responses), and *originality* or *uniqueness* of responses (either objective and statistically uncommon responses or subjective scorings, c.f. Silvia et al., 2008) (Almeida et al., 2008; Mumford & Gustafson, 1988). The factors and measurements are established in creativity research and are also used by the Torrance Test of Creative Thinking (TTCT) (Torrance, 1972). The TTCT is the most accepted and established test to measure creativity (Almeida et al., 2008; Kim, 2008a).

3.4.2 Creativity and innovation

Creativity and innovation are hard to discern, because many models conflagrate both concepts. An exception is presented by Cummings and Oldham (1997) who clearly distinguish between innovation and creativity. In their view, creativity relates to the generation of novel and useful products, ideas, and processes that constitute the “raw material” for innovations. Innovation, in contrast, encompasses the successful implementation of those creative ideas within firms.

Other researchers highlight that creativity and innovation are necessarily related and intertwined. West (2002a) for instance conceptualizes creativity as processes leading to new and useful ideas that is a necessary element throughout the innovation process. Creativity is primarily required at the early stages of an innovation when ideas are developed in response to a problem, but is also needed to overcome possible barriers in later stages. The requirements for creative ideas diminish with later phases of the innovation process (p.385).

Likewise, Kobe (2007) considers creative ideas as inputs to the innovation process in which problems are identified and combined with suitable solutions. Robinson and Schroeder (2004) put creative ideas in a business perspective by outlining that ideas begin when a person becomes aware of a problem or opportunity. Creativity helps them to come up with solutions on how to solve a problem or to use a business opportunity, which is considered as the first step towards an innovation. Creative thinking initiates proposals for change (West, 2002a). In that perspective, creative ideas are possibilities (Robinson & Schroeder, 2004) that need to go through difficult and time-consuming processes and procedures in work organisations before being introduced into practice (West, 2002b). In the early phases of the innovation process, these creative ideas need to be collected, prioritized, and evaluated, before those ideas are selected which will be further developed and implemented into an innovation (Herstatt & Verworn, 2007). Hence, creative ideas are adapted to organizational contexts and stabilized within the innovation process (West, 2002a).

In line with the predominant association of creativity with divergent thinking, Nijstad and de Dreu (2002) reason that convergent thinking and confirmatory approaches to evaluate information are unlikely to lead to creative solutions. Likewise, Paulus (2002) points to research that creativity requires unfreezing from dominant and old perspectives. This perspective is also followed in the present research. Creativity is seen as being associated with predominantly divergent thinking, with the generation of creative ideas that allow solving problems or using business opportunities in a new or uncommon way. In that way, as Paulus (2002, p.395) puts it, the more new ideas the better, since more ideas lead to an increased number of better ideas.

The creative tasks of problem awareness and development of ideas constitute the first step in the innovation process, because there is not much to introduce into the market “*if one does not have some good ideas*” (Paulus, 2002, p.394). In subsequent, evaluative and selective steps, organizations are less interested in many ideas, but rather in those high quality ideas that can be implemented (Nijstad & De Dreu, 2002). Hence, the innovation process deals with the question how groups choose between generated ideas to identify those that will be implemented (Nijstad & De Dreu, 2002).

This sequential perspective may be simplistic, because at some occasions, the evaluative phase precedes the creative phase, for instance when a group has discovered that a particular idea does not work. Or, it may be necessary that teams take breaks in between generation and implementation to process all ideas that have been exchanged (Paulus, 2002). However, Paulus admits that the sequential perspective, that is followed here, is fairly dominant (p.395).

3.4.3 Group creativity

Although already criticised by Shalley et al. in 2004, research has continued to largely focus on individual creativity (George, 2007). The existing research on group creativity has been largely confined to work on group brainstorming (George, 2007; Paulus, 2002; Shalley et al., 2004). In this stream of research, experiments have found that real groups are (in general) less effective than the same amount of alone-working individuals whose ideas are pooled afterwards (a “nominal group”) (e.g., Diehl & Stroebe, 1991; Nijstad & De Dreu, 2002; Nijstad & Stroebe, 2006; Paulus, 2000). This phenomenon is usually explained by creativity losses due to production blocking (Diehl & Stroebe, 1991), evaluation apprehension, social loafing or free riding (Diehl & Stroebe, 1987), and social matching (Nijstad & Stroebe, 2006).

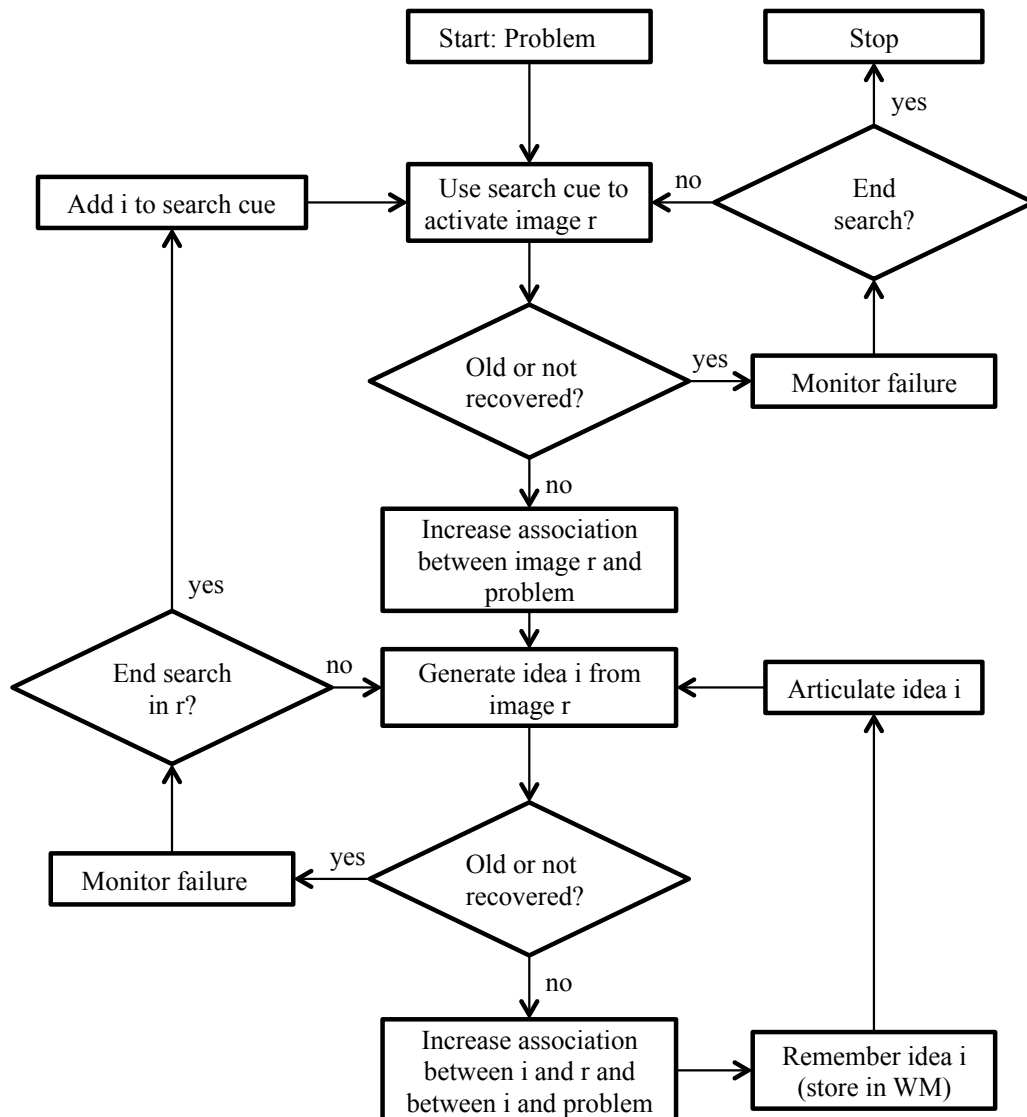
On the other hand, research has also established the idea of social and cognitive stimulation in groups (Paulus, 2000): Social stimulation results from a comparison to other groups, providing the motivation for higher performance due to competition. Cognitive stimulation describes new associations that emerge when team members are exposed to ideas from their fellow members. Paulus (2000) describes that ideas to problems fall into conceptual categories. Being exposed to an idea in a specific category stimulates further ideas in the same category because people associate it with similar or semantically related ideas (Paulus, 2000). He furthermore describes that because categories are more or less available, the benefit of sharing ideas is that it increases the chance to come across ideas or categories that a single brainstorming person would not have thought of. In that sense, group creativity is beneficial because it allows a unique (re-)combination of ideas, categories, or knowledge of team members (Paulus, 2000).

Nijstad and Stroebe (2006) have refined the category model by developing a cognitive model of performance in idea generating groups. Their model, called “Search for Ideas in Associative Memory” (SIAM), builds on the differentiation between long-term memory (LTM) and working memory (WM). It is depicted in Figure 11.

LTM is considered as a richly interconnected network with numerous levels, categories, and associations that is partitioned into mental images (p.192). WM, in contrast, is a temporal storage system with limited capacity for conscious operations. The model assumes two stages in a controlled, associative idea generation process (p.193): First, the problem is used as a cue to retrieve information from the LTM (activation of a mental image) because ideas cannot be generated without reference to prior knowledge (p.192). That mental image is

temporarily stored in WM where its features and associations are combined with one another or with elements of the problem to produce one or more ideas. The procedure works relatively automatic as a “train of thought” (p.193).

Figure 11: Flowchart of the SIAM model of group creativity (Nijstad & Stroebe, 2006)



Once the idea generation of an image is exhausted (failure to generate another idea), a new search for images is conducted with new cues including those from previously generated ideas. When no new cues can be activated and no additional ideas are generated, a negative feedback loop leads to ending the idea generation.

In groups, the authors argue, production blocking exists when ideas are either forgotten while waiting to express them or new images cannot be activated because the capacity in WM is limited (p.200). Furthermore, the attention in WM is required to monitor for ideas expressed by others and opportunities to express own ideas.

On the other hand, cognitive stimulation exists when ideas of others serve as external cues to activate new images in WM. Individuals tend to activate those images, which have the strongest mental connectivity to the cue. Since semantically related ideas have stronger mutual ties, ideas are generated by semantic relation (p.190). Hence, the most obvious, near, and related ideas are generated first. Because ideas of others help to retrieve (additional) images, they increase the diversity of idea production and more different categories are created (p.204). Nijstad and Strobe (2006, p.204) assume that *“this should lead to more categories being surveyed with semantically diverse stimulus ideas, and many ideas being generated within the stimulated categories with homogeneous stimulus ideas”*. Furthermore, since stimulus ideas are automatically added to the search cues, the time needed to develop search cues is reduced leading to a quicker activation of further images and a quicker shift in idea categories (p.205). The authors experimentally show that the diversity of ideas generated in teams relates to more and quicker idea category changes due to their function as additional search cues (p. 206).

Furthermore, idea sharing reduced the amount of cognitive failures in groups, because instances are reduced in which the searches for new ideas or images are unsuccessful. The reduction of failures was found to relate to higher levels of satisfaction and enjoyment, as well as to a later abortion of the idea generation phase (p.209).

In practice, the insights that nominal groups usually outperform real groups (see above) show that productivity losses from production blocking, social loafing, evaluation apprehension, and social matching outweigh the synergistic effects from social and cognitive stimulation. Yet, because of the illusion of higher productivity, brainstorming in groups is widely applied in organizational contexts (e.g., Nijstad & Stroebe, 2006; Paulus, 2002). The normative question, whether nominal or real groups should be used in the idea generation phase of innovations, however, is not in the scope of the present research. Rather, there is a research deficit regarding antecedents and interacting effects that determine creativity in groups (George, 2007; Nijstad & De Dreu, 2002; Shalley et al., 2004). Owing to that research deficit, one of the theoretical models in this research investigates how group-level cultural diversity influences group creativity in innovative activities.

Besides the prospects of teams for idea generation, a highly relevant question relates to the selection of the best idea to be implemented (Nijstad & De Dreu, 2002; West, 2002a). This research is not restricted to the role of cultural diversity for generating ideas, but also considers its role regarding the quality of the idea that is eventually selected and developed into a business plan.

It has already been introduced that innovative activities have increasingly been internationalized. This development implies an increasing division of labour and need for cooperation between international sites. It also implies that the model of group creativity, the selection and development of ideas need to be seen from a perspective of international cooperation across company sites and with international members. To introduce the context for cultural diversity in creative and innovative teams, the next section first deals with the motives of firms to internationalize their innovative activities.

3.5 Motives for innovation management at an international scale

Traditionally, innovative activities have been the least internationalized among the various firm functions (Patel & Pavitt, 1991) - a trend that appears to hold (UNCTAD, 2005). However, data from patent applications, financing and foreign direct investments (FDI), scientific publications, and R&D intensity show that the degree of internationalization of innovation activities has been and still is rising (National Science Board, 2012; OECD, 2007).

It has been stressed (Hegde & Hicks, 2008) that the globalization of innovation is subject to the evolutionary development of firm internationalization. Firms initially create major innovations in their home market and build up international production facilities when they internationalize. As firms mature, they increasingly create international laboratories that start taking over additional functions and create own innovations. Firms therefore increasingly adopt a global approach to innovation and use foreign R&D units to supplement their home competences (Bartlett et al., 2003).

A wide range of influencing factors have been theorized and found to influence the dispersion of innovative activities. These forces can be systematized along their direction (centrifugal vs. centripetal) and origin (internal and external) and are systematized in Figure 12. The driving forces are summarized based on a review of several influential research on the internationalization of innovation (e.g., Archibugi & Iammarino, 1999; Chiesa, 2000; Dunning & Narula, 1995; Gassmann & Bader, 2007; Gassmann & Zedtwitz, 1999; Gerybadze & Reger, 1999; Granstrand, 1999; Ito & Wakasugi, 2007; Kuemmerle, 1999; Kumar, 2001; Li & Zhong, 2003; Nobel & Birkinshaw, 1998; O'Hearn, 2008; UNCTAD, 2005; Zander, 1999; Zedtwitz & Gassmann, 2002).

Figure 12: Driving forces behind the internationalization of innovative activities

		Origin	
		internal	external
Direction	centripetal	<ul style="list-style-type: none"> • Economies of Scale • “Critical mass” • Problems of coordination and control • Immobility of experienced personnel • Linkages with home-country national or regional systems of innovation • Fear of undesired external diffusion of technologies 	<ul style="list-style-type: none"> • IPR protection • Fear of undesired external diffusion of technologies
	centrifugal	<ul style="list-style-type: none"> • Cross-fertilization and increased learning between dispersed units • Internal competition for charter • Development of unique competences in (international) subsidiaries • Mergers and acquisitions 	<ul style="list-style-type: none"> • Foreign market size • Necessity to adapt product and processes to local markets requirements • Need to introduce an innovation simultaneously in major markets • Following activities of market leaders, competitors, and customers or OEMs • Governmental influence • Worldwide dispersion of leading technological areas • Abundance of qualified (and low-cost) science and engineering personnel abroad • Scarcity of R&D resources in home-country • International R&D cooperations

As Figure 12 shows, the internationalization of innovation cannot only be viewed both as an evolutionary development of internationalization of firms, but is also a conscious management decision to benefit from specialization between worldwide-situated sites. This has two implications for the present thesis: First, the international dispersion of innovation has inherent limitations e.g., imposed by immobility of personnel and strong (personal) linkages with local innovation systems. Effective international innovation therefore requires more coordination and control on a global scale. Consequently, international cooperation is often conducted in teams, accompanied by a project management approach (Mendez, 2003). These teams often exhibit dimensions of international composition, virtuality, and (global) dispersion. Hence, the more firms internationalize their innovative activities, the more teams are needed with a degree of cultural diversity, which work effectively on creative and innovative tasks.

Second, because global innovation has moved from adaptive activities to global exchange and learning (Bartlett et al., 2003), the role of international innovative activities has gained a high strategic relevance for firms. Consequently, the nature and tasks of international

cooperation in innovative teams have changed and low effectiveness of such culturally diverse innovation teams may have significant consequences for a company's strategic position.

These insights highlight the importance of teamwork for international innovation activities from a macro-economical and firm-level perspective. The next section builds on the theoretical foundation and introduces the role of workgroups for innovative activities.

3.6 Teamwork in innovative activities

Literature has often highlighted the importance of teamwork to successfully generate and introduce innovations (Högl, 2005; Joshi & Roh, 2009; Mudambi et al., 2007). This perspective is based on theoretical approaches to innovation e.g., from project, life cycle, and quality management (Högl & Gemünden, 2001) and supported by various empirical studies that have shown a positive relationship between cooperation in teams and success of new product developments and innovations. Among those are mainly the well-known benchmark studies by Cooper and Kleinschmidt (2007) the work by Högl and Gemünden (2001), and Sethi and Nicholson (2001).

Teamwork is nowadays a common organizational form for generating innovations (Edmondson & Nembhard, 2009; McDonough, 2000). Tjosvold and colleagues (2004) have even argued that innovation in organization can be understood as a “*collaborative, team process*” (p.541). The importance of team cooperation in innovation management is subject to the complexity, dynamic and uncertainty of the innovation task (Grant, 1996), which increase with an innovation's degree of novelty and change. In more radical innovation projects, teamwork is considered as significantly contributing to project success (Högl et al., 2003). Similarly, the OECD (2005) stresses that radical innovations particularly benefit from loose, flexible, decentralized forms of organizations, as teams are.

3.6.1 Rationale for teamwork in innovative activities

Arguments for teamwork in innovation management are to promote (1) an integrated and holistic perspective and better learning opportunities; (2) better coordination and thus faster time to market and lower costs, and (3) a higher acceptance within the firm and from external stakeholders (Edmondson & Nembhard, 2009; Högl, 2005). These aspects will be briefly discussed hereafter.

The amount of knowledge relevant to create innovations evolves with a fast pace (e.g., Gassmann & Bader, 2007; WIPO, 2011). This trend forces employees in firms to specialize in order to keep pace with the latest technological developments and knowledge advances (Edmondson & Nemhard, 2009). Furthermore, innovative products and services often require a combination of different sciences (e.g., computer science, electronic engineering, and mechanics) (Gassmann & Bader, 2007) creating interdependences between different knowledge areas. The **integrated and holistic perspective** is expected to result from the various backgrounds, interests and information sources of team members. In this sense, much research has been conducted from a learning and information processing theory perspective on the use of cross-functional or interdisciplinary teams. Each team member contributes own experiences, expertise and points of view to achieve the collaborative task. The theoretical foundation is that cross-functionality is accompanied by differences in specialized knowledge (Postrel, 2002).

The specialized knowledge is considered to be “sticky” to the respective disciplines or locations (Hippel, 1994). Sticky information is “*costly to acquire, transfer, and use*” (p.429) and is not easily transferred across geographic boundaries or disciplines. This requires specialists, which are close to the source of the problem that needs to be solved. Hence, bringing individuals from different backgrounds and locations together in a workgroup provides a group with specialized knowledge from a wide range of areas (e.g., Ancona & Caldwell, 1992; Edmondson & Nemhard, 2009). In addition, team members with different functional backgrounds communicate more outside the team’s boundaries, which allows integrating an even broader cognitive spectrum by increasing the team’s absorptive capacity (Ancona & Caldwell, 1992; Xia & Roper, 2008). Fagerberg (2005) points out that innovations consist of a new combination of ideas, capabilities, skills and resources. The available stock of specialized knowledge increases the potential for new combinations of ideas and knowledge leading to a higher potential to innovate of the team (Gebert, 2004).

Grant (1996) highlights the importance of teams for problem solving activities in unusual, complex, and important tasks, as innovations are. Innovation and new product development can be seen as examples for problem-solving processes (Caloghirou et al., 2004), closing the gap between company performance (e.g., in its products and services) and market requirements (e.g., Vahs & Burmester, 2005). Team members contribute their specialized knowledge within the team to solve the problem – hence teams function as knowledge integration entities. Jarvenpaa and Majchrzak (2008) argue that teams use simple or minimalist rules (e.g., problem-solving methods) to organize knowledge integration processes.

As they integrate different specialized knowledge, groups are considered as important entities for learning. Group learning allows the diffusion of individual knowledge within the group and further into the organization (Senge, 1990; Wilson et al., 2007). The team setting allows learning processes in the social interaction between team members that often would not be possible otherwise. Edmonson (1999, p.354) defines team learning as “*an ongoing process of reflection and action, characterized by asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of actions.*” Learning occurs by errors and differences between actual and expected outcomes (Edmondson, 1999). In this sense, team problem solving is regarded as a key mechanism to generate new knowledge and competences (Iansiti & Clark, 1994). Likewise, Griffith and Sawyer (2010a) highlight that teamwork is a major “building block” for research activities since much learning takes place at the team-level. Teams provide the opportunity to bring breadth as well as depth of knowledge to bear on a particular problem, increasing knowledge generation and integration in innovations.

The second rationale for teamwork in innovative activities is the assumed **better coordinative** ability. Since innovations require that different specialized departments contribute various activities along the innovation process, the complex and interdependent process requires coordination of efforts to decrease time to market and costs. Especially under the circumstance of shorter product life cycles (Gassmann & Bader, 2007) and payback periods for expenses, these aspects are decisive for an innovation’s success. Teamwork is used as a coordinative means to reduce friction losses between different departments when each department is represented by team members (Adenfelt & Lagerström, 2006; Cohen & Bailey, 1997). Friction losses are minimized as the interface between different departments is already integrated within the project team, allowing a smooth(er) hand-over of activities from one department to another (e.g., from R&D to production).

Additionally, teamwork is expected to allow a better control of innovation activities. Department organization often allows space for interpretation and discussions about responsibilities if innovation projects fail. Within a team setting, the responsibility is jointly born by individuals committed to achieving the task (Högl, 2005). Finally, innovation teams are a special type of coordination means. Contrary to formal project structures, teams are highly loose, autonomous (Cohen & Bailey, 1997), decentralized and little hierarchical (George, 2007) entities. These characteristics are considered as helpful in innovative tasks (Grant, 1996).

The third rationale for teamwork aims at a **higher acceptance** of the innovation. As discussed above, innovation teams usually integrate people with different expertise, typically including specialists from R&D, engineering, manufacturing, production, and marketing, supplemented by specialists from purchasing, financing, controlling and other areas (Edmondson & Nembhard, 2009). When different perspectives, goals, ideas, etc. are integrated within the team and the resulting task conflict is successfully resolved, it is estimated that the internal acceptance of the innovation is increased (Högl, 2005; West & Hirst, 2005).

With regard to external acceptance of innovations, team structures allow integrating of different international customer perspectives during the entire innovation project. In international cross-functional teams, marketing team members (e.g., from different international lead markets) are able to represent the customer perspective to assure that customer requirements are met. Tacit knowledge about customer requirements emerges from local contexts and tends to be sticky (Hippel, 1994; Subramaniam et al., 1998). From an international perspective, knowledge from international sites needs to be integrated especially when introducing cross-national products (Subramaniam, 2006). For those products, teams need to account for similarities across nations and product standardization, as well as for differences across countries and adaption to local contexts. Adenfeld and Lagerström (2006) found in their case study that transnational teamwork allowed for better knowledge sharing because of deep understandings of country-specific legislation and customer requirements.

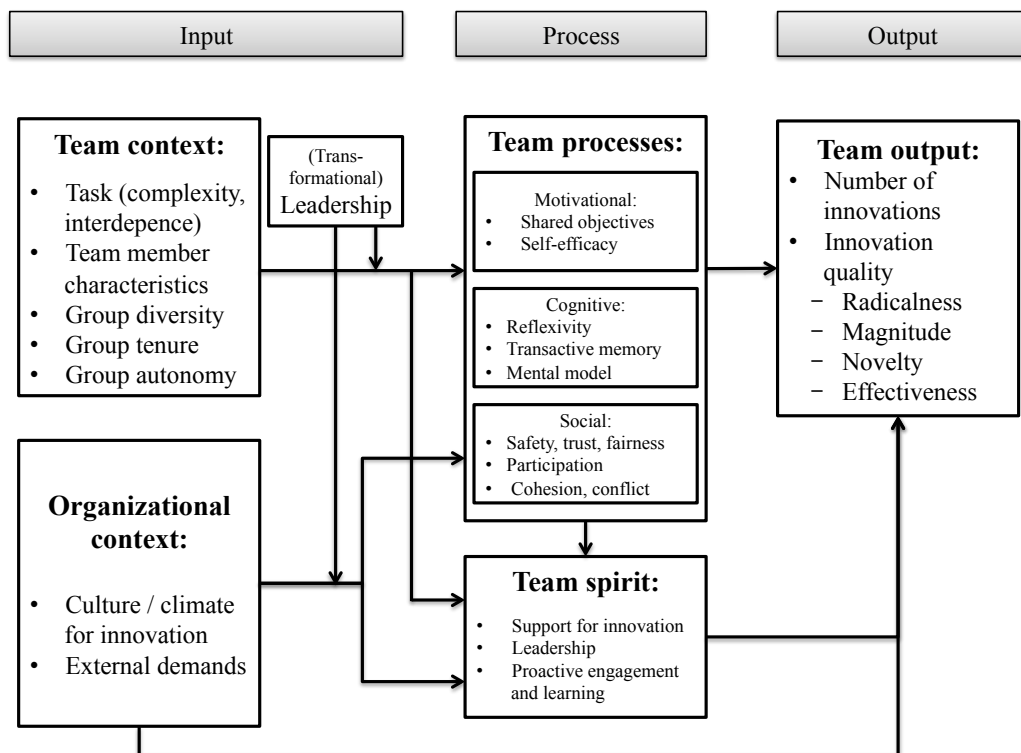
Team structures also allow including lead users. Urban and von Hippel (1988) suggest that if the perspective of lead users is integrated in the (early) idea generation and design phases, the customer requirements are more precisely met (Cooper & Kleinschmidt, 2007) and products are better accepted in the market.

To summarize, innovations have become increasingly complex, dynamic and uncertain, which is why they require more specialized knowledge and coordination across increasingly global company sites. Team-based structures allow flexible and decentralized problem solving. Teams are considered as more effective than other organizational structures, because they allow an integrated and holistic perspective on a problem, better coordination, and a higher acceptance of the solution. Yet, many influencing factors determine how effective teams are in generating and implementing innovations. The next subsection introduces a combined model for innovation effectiveness of teams.

3.6.2 Team innovation effectiveness

It would exceed the scope of this thesis to give a comprehensive review of all factors that have been suggested and researched regarding their influence on teams' innovative performance. Yet, for the development of the research model it is useful to review which factors have been considered as being most influential. West and Hirst (2005) have developed a model that integrates theory and empirical findings from previous group innovation literature. A further integrative model for team effectiveness in the context of innovative activities has been developed by Gebert (2004), based on an extensive review of theoretical and empirical work on group innovation. Both models have in common that their structural design is based upon the I-P-O-framework by McGrath (1964), but also incorporate several factors from Salas et al. (2005) dimensions of teamwork. Furthermore, the factors predicting team innovative performance are to some extent overlapping. Since both models incorporate extensive material from prior work, the combination of both models is considered to provide an accurate overview of the main factors for team innovation effectiveness. The combined model is illustrated in Figure 13 and will be described hereafter.

Figure 13: Model of team innovation effectiveness (Gebert, 2004; West & Hirst, 2005)



As teamwork allows an integrated and holistic perspective, West and Hirst (2005) argue that the major input factor lies in the diversity of group members that has influence on scientific performance and R&D effectiveness.

Besides the diversity of backgrounds, the model includes individual characteristics of team members. Their individual innovativeness and their ability to work in groups are considered as relevant team context variables. Furthermore, West and Hirst (2005) argue that team leadership moderates the relationship between diversity and team processes. Team leaders need to integrate the diverse perspectives and assure that team processes are positively affected by diversity. Likewise, Gebert (2004) highlights the importance of transformational leadership in innovative teams, but argues based on empirical research that transformational leadership mostly affects the team spirit by fostering critical and proactive reflection and increasing organizational citizenship behaviour.

Team tenure is expected to influence the innovative performance of workgroups negatively and positively. West and Hirst (2005) build on empirical results by Katz (1982) stating that team tenure seems to have a curvilinear relationship to innovative performance. It is argued that team longevity leads to self-isolation of teams. On the other hand, from a social integration and psychological safety perspective, team longevity positively influences innovative performance by creating a predictable and safer social environment (West & Hirst, 2005). Hence, interacting effects of tenure, diversity, psychological safety and innovativeness are suggested.

Task characteristics as structural factors in the model include the autonomy of the workgroup, the interdependence of team members, and whether the team performs the task as a whole or only subtasks (Gebert, 2004; West & Hirst, 2005).

The organizational context creates the environment in which the team operates. It determines its innovativeness directly and through team processes. West and Hirst (2005) outline how organizational culture influences creativity, idea generation and risk taking in organizations. An important aspect of organizational culture is how innovations are perceived and encouraged, e.g. by management support at all levels, a fair evaluation of ideas, rewards and recognition for creativity, collaborative environments and participative leadership. Further structural context variables include complexity and centralization of the organization, as well as its age and size.

Gebert (2004) discerns team processes into motivational, cognitive and social processes. Motivational team processes include the variable “shared objectives” by West and Hirst (2005) and team self-efficacy (Gebert, 2004).

Shared objectives imply that ideas for innovations can be filtered with greater precision and that team members are persistently committed to the task (West & Hirst, 2005). Gebert (2004) refers to Wageman (2001) stating that objectives need to be clear and make sense to the group members, hence require a good and attractive communication of goals.

Cognitive team processes include team reflexivity, a transactive memory system and a shared mental model. Team reflexivity has been defined as the extent to which teams reflect upon and modify their functioning (West & Hirst, 2005, p.268). The concept is largely studied by West and colleagues (e.g., Carter & West, 1998; Tjosvold et al., 2004; West & Anderson, 1996). Upon reflection of their own functioning and the way the team tries to accomplish their goals, teams may find it useful to adapt their objectives, strategies and processes (Tjosvold et al., 2004). This process largely resembles adaptiveness as described by Salas et al. (2005). West and Hirst (2005) describe team reflexivity as composed of three central elements of reflection, planning, and adaptation. Reflection is argued to lead to innovativeness when negative or inconsistent findings are collectively interpreted by reframing cognitive representations of tasks. Detailed planning and inclusiveness of problems increases the chances for successfully introducing an innovation by creating a conceptual readiness within the team (West, 2002a). Adaptation or action includes rather a behavioural component to enact changes in team objectives, strategies and processes.

The transactive memory was introduced by Wegner et al. (1991) as a socially shared system for encoding, storing and retrieving information. Within a team of members with diverse knowledge, the group needs to develop a joint meta-knowledge of the expertise possessed by each member and an awareness of “who knows what” (Gebert, 2004; Rulke & Rau, 2000). Because innovation is seen as a recombination of knowledge and ideas (Fagerberg, 2005; Gebert, 2004), the transactive memory is regarded as an enabler to take advantage of and recombine members’ knowledge and ideas.

Gebert (2004) and West and Hirst (2005) highlight the importance of a shared mental model within the team, consisting of a team-based and a task-based mental model. A team-based shared mental model is related to Jehn and Mannix’ (2001) perspective of process conflicts. Teams need to find and agree upon a joint model of cooperation in order to develop smooth team processes and be effective (Mathieu et al., 2000). Gebert (2004) argues that a team-based shared mental model is a prerequisite to develop a functional task-based mental model. He cautions that the task-based mental model needs to be the “right” one and not distorted by groupthink.

Social team processes include the generation of trust, fairness and safety, a good participation and cohesion within the team (Gebert, 2004; West & Hirst, 2005). These social

processes are interrelated and create an environment in which critical reflection, learning, and the expression of ideas are promoted or hindered, which influences the innovativeness of a team. Multiple studies have analysed the relationship between trust, learning, and effectiveness of innovative teams (e.g., Barczak & McDonough, 2003; Edmondson, 1999; Müthel et al., 2012). Trust and safety relate to the risk teams and their members can take in communicating and jointly discussing mistakes or problems, asking for help, or developing creative and unconventional solutions (Gebert, 2004; West & Hirst, 2005). Furthermore, West and Hirst (2005) argue based on empirical findings that innovative teams require participation, a scrutinized analysis of problems, and a joint willingness for change.

Fairness and justice relate to the likelihood and intensity of conflicts that emerge in teams. Gebert (2004) points out that fairness includes a procedural fairness in which resources, but also tasks and burdens need to be fairly divided between members of a group. Procedural fairness relates to the emergence and intensity of process conflicts. Gebert (2004) argues based on empirical results by Tyler and Blader (2000) that distributive justice positively influences cooperation within teams by increasing satisfaction, loyalty, commitment, compliance and extra-role behaviour. When tasks and burdens are divided unfair within the group, team innovativeness decreases because other team members will react by diminishing their work input according to social loafing theory (Gebert, 2004).

Furthermore, Gebert (2004) and West and Hirst (2005) highlight the potential benefit of task-related conflicts for team innovativeness. Both authors refer to empirical evidence that suggests task conflict to positively influence team performance, at least when tasks are highly complex (as innovative tasks are). The positive effect is argued to stem from constructive controversy that improves the quality of decision making and creativity. Furthermore, West and Hirst (2005) include work on minority influence, suggesting that minorities holding specific information may cause majority members to re-evaluate their perspectives and adapt strategies and processes more appropriately. A task-related conflict is suggested to create a participative climate that leads to innovation by encouraging debate.

Gebert (2004) cautions that task conflict effects are contingent upon the intensity of task conflict, as well as because they are usually correlated to the emergence of relationship conflict (De Dreu & Weingart, 2002). Hence, although task conflict may be beneficial, it usually involves the emergence of relationship conflict with associated negative effects on team performance. In sum, Gebert (2004), as well as Hüttermann and Börner (2011), suggest that task conflicts may be beneficial for innovative tasks if the conflict is not too intense and if teams are able to prevent task conflicts to degenerate into relationship conflicts.

A further social team process is cohesion, described as a mutual positive feeling of togetherness between members of a team (Rosenstiel, 2007). Gebert (2004) argues that cohesion influences the performance of innovative groups depending on the context (team norms, type of tasks) directly and through its influence on groupthink. Although cohesion may negatively influence team innovativeness through groupthink, he proposes that the specific context with an assumed high task-related cohesion in innovative teams rather promotes positive effects (p.85).

Gebert (2004) furthermore highlights the importance of an innovation-oriented team spirit. The team spirit is related to leadership and support for innovations and manifests in critical and proactive reflection as well as an increased citizenship behaviour (Gebert, 2004). Likewise, West and Hirst (2005) find from their own empirical research that teams need to develop norms where innovations are supported.

To summarize, team innovativeness is considered to be influenced by a large variety of factors. Empirically, Högl and Gemünden (2001) studied how teamwork quality influences team innovativeness. In their study, they found that the quality of team processes (communication, coordination, balance of contributions, mutual support, effort, and cohesion) predicted the performance of innovative teams. Since the effect sizes in their study were mostly only moderate, major parts of team innovativeness are not explained by the team processes included in their study. Hence, team innovativeness is subject to a multitude of factors and context variables, and the models by Gebert (2004) and West and Hirst (2005) give a good overview of the complex and multidimensional influences.

The reflection upon influencing factors on team innovation effectiveness has several implications for the present research. It highlights the importance of diversity in innovative teams and substantiates the importance of studying how a culturally diverse team composition affects innovativeness. Furthermore, the models underline the importance of communication and reflexivity within teams. Only when team members establish effective communication, team members are able to develop trust and relationships, as well as a cooperative atmosphere (Barczak & McDonough, 2003). Therefore, referring to Salas et al. (2005), communication functions as a lubricant for team processes and team spirit to reach innovation effectiveness. It can be expected that communication not only influences reflexivity within teams through the exchange of information about objectives, strategies and processes, but also by creating an environment in which teams can critically reflect, learn and express their ideas. For those reasons, communication and reflexivity were chosen as variables in the empirical part of this research.

Another implication is the role of conflict in innovative teams. Conflicts are inevitable in teams (Mathieu et al., 2000). As the discussion above has shown, different forms of conflict are assumed to bring about different effects in innovative teams. Especially the relationship between the forms of conflict, suggesting that beneficial task conflicts spill over to harmful relationship conflicts needs further empirical evidence. Because of complex interaction of types of conflict and their interrelated effects, conflict was selected as a further variable for empirical research.

In Chapter 3.5, the internationalization of innovative activities and its implications at a macro-level were discussed and introduced. It was suggested that international cooperation and coordination usually requires team-based structures. The next section therefore aims to introduce the specific context of newer forms of teamwork and their effects on team innovativeness.

3.6.3 The international dimension of innovative teams

Because of the international dispersion of innovative activities in firms, transnational teamwork has been identified as an important organizational mechanism to generate innovations (e.g., Adenfelt & Lagerström, 2006). Several studies have investigated how the internationalization of innovative activities influences teamwork. This subsection reviews the literature on newer forms of teamwork (e.g., global, virtual and/or geographically-dispersed) in innovative activities. The first part of this subchapter analyses the usage of international teamwork from a firm-level perspective. Thereafter, the dimensions of newer forms of teamwork (see Figure 8 above) are described with regard to innovative teamwork. Finally, the subchapter concludes with implication for the present thesis.

Several studies researched the usage and impact of **international teamwork in innovative activities at the firm level**. Subramaniam et al. (1998) found based on 13 case studies that differences in global markets and among dispersed plants create uncertainties for firms. They reason based on information processing theory and knowledge management that when international innovation activities involve largely tacit knowledge, firms tend to create cross-national teams. In these cross-national teams, members stem from countries where the relevant tacit knowledge is situated. Because they can more effectively absorb, transfer, and integrate relevant tacit knowledge, the authors reason that firms with cross-national teams in innovation management outperform others.

In a quantitative follow-up study, Subramaniam and Venkatraman (2001) confirmed that multinational corporations enhance their innovative capabilities by transferring and

deploying overseas tacit knowledge. The effective transfer requires rich interaction and information processing, achieved by cross-national teams and frequent communication.

Ambos and Schlegelmichel (2004) found that international teams are mostly used for exploitative activities with global or regional market mandates. In their study, geographical and cultural distance between home and host country innovation units had no significant effect on the usage of international innovation teams. Barczak and McDonough (2003) studied 109 firms in how they use global innovation teams. They found that major arguments for these teams are to address global markets, to identify and incorporate local needs, and to bring together dispersed and diverse resources.

At the team-level, **global dispersion in teamwork** emerges because personnel in innovative activities is often difficult to transfer due to social ties and associated costs (von Zedtwitz and Gassmann, 2002). Personnel is often embedded in a complex network of social contacts within their work environment. Transferring people would break up the ties and consequently decrease their productivity in a new location. Furthermore, in an integrated innovation network the specialization of the interdependent locations is detrimental to mobility, because staff members specialize along with the specialization of the globally dispersed units in which they reside. A specialist from one site may lose his advantage when being located at a different site, especially when the innovation network strategy relies on the exploitation of local advantages (Mendez, 2003). These factors are expected to increase the usage of globally dispersed and virtual teams in innovation activities.

With regard to effects of dispersion, positive results of geographical dispersion were found by Cummings (2004) in his large empirical study of 182 workgroups. He established that knowledge sharing between members increases team performance. Structural diversity, which includes a measure of geographical dispersion, positively moderates the effect.

Högl et al. (2007) found in their quantitative study that geographical dispersion can lead to high levels of efficiency and effectiveness of teams. However, geographical dispersion moderates the positive relationship between teamwork quality and team performance. Hence, in geographical dispersed teams it seems to be more difficult to establish high quality teamwork, but if achieved, these teams have the potential to produce highly effective results.

A similar difficulty of establishing viable processes in dispersed teams was found by Espinosa et al. (2007a) in software development teams. They established that global dispersion had a negative effect on team performance because of increasing coordination complexity. This negative effect, however, was mediated by team familiarity: when members of a workgroup are familiar with each other, coordinative tasks are easier and they obtain quicker responses to their queries. In another study, Espinosa et al. (2007b) found in

qualitative grounded theory research that geographical dispersion hinders team coordination through less communication and less effective communication. Team knowledge and shared knowledge specific to the task, however, helps geographically dispersed teams in their innovative tasks.

Other research investigated the effects of **international and/or intercultural team composition**. Positive results were found by Hautala (2011) in her case study of four academic research groups. She suggests that national diversity in groups is associated with a variety of knowledge bases and cognitive distances. She argues that achieving a balance between a common understanding (cognitive proximity) and the variety of knowledge bases (cognitive distance) is essential for group learning. In this sense, she proposes that a cognitive friction between members of an international workgroup enables the team to create novel insights when team members have a shared knowledge about the content of a task, but maintain cognitive distance by the structure of their knowledge bases. Thus, in international innovation teams, members should develop a shared mental model, but interpret, organize and apply knowledge in their specific ways to create novel combinations and creative insights.

Combining the transnational team composition with geographical dispersion, Lunnan and Barth (2003) argued in their case study of transnational and geographically dispersed teams that geographical and cultural distance increase the potential for generating and interpreting new knowledge. However, they also found process losses with regard to the integration of knowledge since firms disfavoured learning that is distant from previous practices and experiences.

Effects on knowledge development were also studied by Adenfelt and Lagerström (2006). They argued that centres of excellence and transnational teams are important organizational mechanisms for innovation activities. From case study research, they found that knowledge development in transnational teams is initially hampered by less interpersonal relationships, a lack of team structure and shared practices within the team. Members from different nations appear to have less knowledge overlaps, which, in turn and after time consuming processes, may increase knowledge sharing in cross-national teams.

While there seems to be a great potential of internationally composed workgroups, it appears that the development of functional team processes is hampered. In their case study of six transnational innovation teams, Bouncken and Winkler (2010) proposed that cultural diversity of team members increases the potential of conflicts and consequently negatively affects team performance. They proposed that the conflict level has a curvilinear relationship to faultline strength that is determined by the configuration of cultural diversity. Faultlines

are defined as “*hypothetical dividing lines that may split a group into subgroups based on one or more attributes*” (Lau & Murnighan, 1998, p.328) and will be introduced in detail in Chapter 4.2.3 of this thesis. High conflicts are expected to emerge in teams with a dominant national culture and in bi-cultural teams. These conflicts are proposed to negatively influence team innovativeness moderated by language competency and cultural experiences of team members.

In another empirical study of 19 transnational teams, Bouncken et al. (2008) found that individual personality influences attitudes towards diversity. This individual-level research has shown that negative or denial attitudes towards cultural diversity impede innovativeness and performance in teams. Also at the individual-level, Hirst et al. (2009) have researched the effect of individual goal orientation and individual creativity in cross-national teams. They found that learning orientation of a team moderates the positive relationship between individual goal orientation and individual creativity.

In sum, individual antecedents as language competency, cultural experiences, personality aspects, goal orientation, combined with team-level processes of communication, conflict, and learning orientation seem to influence the effectiveness of internationally composed teams for innovation activities. These individual- and team-level influences can also explain firm-level results. In a study of 90 new product introductions, Subramaniam (2006) analysed how cross-border knowledge can be most effectively integrated in innovative products. Evidence was found that innovative competencies are enhanced through knowledge transfer and integration in joint cross-national collaborations, whereas cross-national communication and teamwork appeared to be ineffective in this situation. The author concludes that problems in cross-national collaborations and knowledge transfer emerge when managers believe that the conflict between global standardisation and local adaption undermines members’ local interests.

The conclusion of Subramaniam (2006) is empirically corroborated by Zellmer-Bruhn and Gibson (2006) at the team-level. They analysed in a quantitative empirical study how the macro-organizational context (global integration, local responsiveness, and knowledge management) influences team learning and performance. They find that focusing on global integration by standardisation of products and processes negatively influences team learning. Both local responsiveness and knowledge management increase team learning, which also has a positive effect on task performance and interpersonal relationships.

Other research deals with the usage and effects of **virtual teams in innovation activities**. For instance, Montoya et al. (2009) found that the usage of different media to communicate in virtual teams is subject to task and organizational contingencies. In order to communicate

effectively, team members in virtual teams should establish standards for communication, use synchronous media especially in social tasks, and prioritize their communications aligned with the media used.

In the context of knowledge sharing and integration within teams, Griffith and Sawyer (2010b) found that individual explicit knowledge is positively influenced by technology-mediated knowledge sharing. Their results suggest that technology-mediated tools (e.g., databases) are antecedents for individual explicit knowledge. The individual explicit knowledge contributes to the explicit knowledge available to the team, which was found to positively influence team performance.

Beyond the studies that focused on one specific dimension, several studies researched how the **combination of international team composition, virtuality, and geographical dispersion** affects innovativeness. For instance, Murray and Chao (2005) underline in their conceptual article that global virtual teams are considered as important resources for knowledge transfer, acquisition, and exploitation. Global virtual teams are considered as effective means to acquire capabilities for increasing product quality and decreasing time to market.

Empirically, Muethel et al. (2012) have shown that interpersonal trust is extremely important in global, virtual innovation teams. Dispersion, virtuality and national diversity were found to moderate the relationship between trust and team effectiveness. Monalisa et al.'s (2008) case study research with eight global virtual design teams suggests that critical success factors are organizational and personal aspects – and that a key factor in leading culturally diverse innovation teams is establishing effective communication. Moenaert et al. (2000) analysed the requirements and communication flows in international innovation teams in four cases studies. Their results suggest that innovation success depends on the fit between communication requirements (effectiveness and efficiency) and team capabilities (core teams, leadership, formalization, and procedural justice).

In sum, several conclusions can be drawn from reviewing the deployment of newer forms of teamwork and their effects in international innovation activities. First, most studies share the notion of an increasingly international composition of team members and consequently, cultural diversity in innovative teams. Furthermore, the diverse composition of innovative teams is often implicitly or explicitly associated with differences in (often tacit) specialist knowledge of team members. The different knowledge areas can enhance knowledge sharing and cognitive frictions within the group, which allows innovative groups to generate and interpret new knowledge. Hence, the team composition seems to be a valuable antecedent to team learning and effectiveness. Better team learning, in turn, should positively affect

creativity when members have a clear goal orientation. Especially in the context of innovative activities, where different tacit specialist knowledge is blended to create new capabilities for the firm, a national and cultural diversity seems to be beneficial.

However, it also seems to be established that this team composition is associated with process losses at the team level. The differences in knowledge and backgrounds were found to make it more difficult to establish good teamwork. Coordination of tasks is more complicated as it requires familiarity between members, and communication is hindered because of lacking shared knowledge of the task. For interpersonal relationships, shared structure and processes to emerge, teams appear to need time to develop knowledge overlaps – at least with regard to shared objectives, shared mental models and a transactive memory system.

Besides these cognitive effects, the team composition was found to affect social processes. Influenced by individual-level antecedents of personality and attitude towards diversity, the differences between members of such workgroups appear to enhance conflicts. Furthermore, newer forms of teamwork seem to be associated with less and less effective communication between members and with a lack of trust (Murray & Chao, 2005). However, Ochieng and Price (2010) found that effective communication is required to generate trust in multicultural construction teams.

3.7 Summary and implications for the present research

This chapter has dealt with teamwork in creative and innovative tasks. It was established that creativity is a major input in the innovation process, predominantly within the early phases. Because of their importance and the design of the present study, the early phases of the innovation process are in the focus of the present research.

Furthermore, the reasons for internationalizing innovative activities have been discussed, since the degree of globalized innovation was found to increase (National Science Board, 2012). Because innovative activities are highly complex and require a wide range of specialized knowledge, teamwork seems to be the established form of cooperation. A major argument for teamwork is the assumed integrated and holistic perspective, a higher coordinative ability, and better acceptance of innovations generated in teams. A wide range of factors have been researched that influence whether teams are effective in developing and introducing innovations. In this chapter, the team innovation effectiveness models by Gebert (2004) and West and Hirst (2005) were introduced, which integrate much empirical research on team innovativeness.

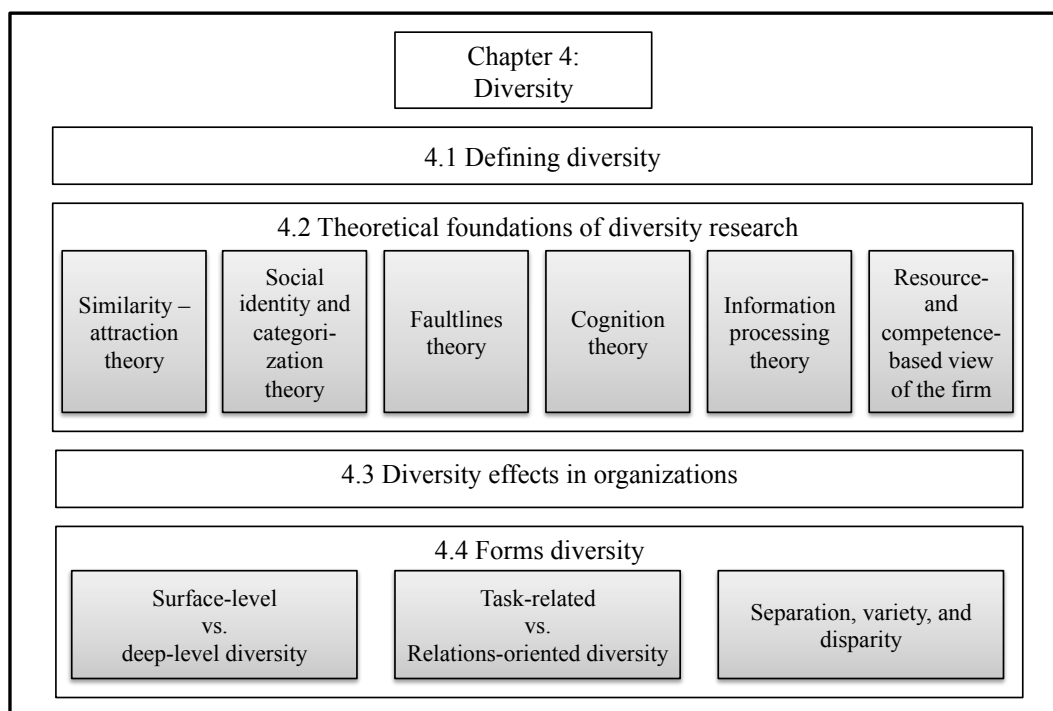
Because of the internationalization of innovation, newer forms of teamwork become established for innovation activities in firms, and researchers have begun studying these phenomena. While newer forms of teamwork are associated with a great potential in the context of innovation activities, negative moderating and mediating effects seem to reduce their effectiveness. Most of the reviewed studies either implicitly or explicitly argue based on effects brought about by cultural diversity in teams. However, although many studies use intercultural samples, none of the reviewed studies has explicitly operationalized and measured the effects of cultural diversity within teams. Hence, too little is known about the diversity of cultural behaviour and values in international innovation teams. While Bouncken and Winkler's (2010) cases provide valuable insights in how team diversity constellations affect conflict and team innovativeness, no empirical study has yet quantitatively assessed how cultural diversity among team members impacts team processes and team creativity, as well as innovativeness. The research in the present thesis aims at closing this gap.

In order to further introduce cultural diversity as a team-level input factors in innovative teams, the next chapters provide theoretical foundations on diversity and cross-cultural research.

4. Diversity

This fourth chapter aims at introducing the concept of diversity. It starts with providing a workable definition of diversity, before introducing briefly various important theoretical foundations of diversity research. Thereafter, effects from diversity at various organizational levels are described. Because diversity is no clear-cut phenomenon, but has emerged as complex and multi-faceted, the chapter introduces different forms of diversity. The outline of the fourth chapter is depicted in Figure 14.

Figure 14: Outline of the fourth chapter



4.1 Defining diversity

The most commonly used definition of diversity (Mannix & Neale, 2005) has been introduced by Williams and O'Reilly (1998, p.81) as “...*any attribute that another person may use to tell themselves that another person is different*”. This definition is very broad and similar to the one found by Milliken and Martins (1996) in dictionaries and as used by Mannix and Neale (2005). The broad definition of diversity allows an extensively wide range of attributes and settings to be studied under diversity interests.

However, it lacks a certain degree of sharpness required in research, and various authors have refined the definition of diversity. One such definition has been introduced by van Knippenberg and Schippers (2007) (see Table 2), refining the notion of diversity to social groupings and including objective and subjective (perceived) differences. A second refinement was proposed by Harrison and Klein (2007) (Table 2), pointing to the fact that diversity is subject to the distribution of differences and can be used as synonym to heterogeneity, dissimilarity, and dispersion. Similar to van Knippenberg and Schippers (2007), their definition exceeds the ones by Williams and O'Reilly and Milliken and Martins by focusing the research object to a social unit. Likewise, Joshi and Roh (2009) specify that diversity can be understood as an aggregate team-level construct, in which the research object is confined to workgroups.

Table 2: Overview of definitions for diversity

Author	Definition
(Williams & O'Reilly, 1998)	“...any attribute that another person may use to tell themselves that another person is different.” (p.81)
(Jackson et al., 2003)	“We use the term diversity to refer to the distribution of personal attributes among interdependent members of a work unit.” (p.802)
(Mannix & Neale, 2005)	“...we will define diversity as variation based on any attribute people use to tell themselves that another person is different.” (p.33)
(van Knippenberg & Schippers, 2007)	“...characteristic of social grouping that reflects the degree to which objective or subjective differences exist between group members.” (p.516)
(Harrison & Klein, 2007)	“...the distribution of differences among the members of a unit with respect to a common attribute.” (p.1200)
(Joshi & Roh, 2009)	“We define diversity as an aggregate team-level construct that represents differences among members of an interdependent work group with respect to a specific personal attribute...” (p.600)
(Mazur, 2010)	“...the collective, all encompassing mix of human differences and similarities along any given dimension.” (p.7)

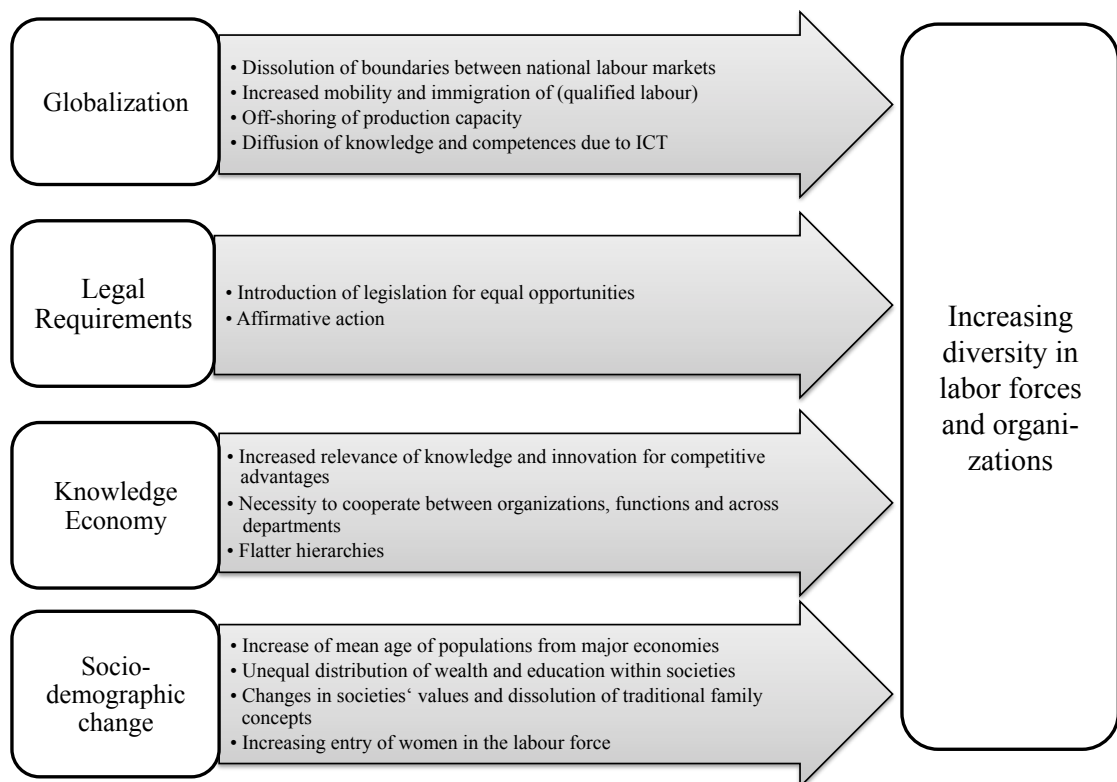
Besides the refinement of the research object, more recent definitions have moved beyond the dichotomous notion of similarity or difference between people. Rather, diversity is perceived as the degree and the distribution (or mix in the words of Mazur, 2010) of

differences between members of a social unit or group (Harrison & Klein, 2007; Jackson et al., 2003; van Knippenberg & Schippers, 2007). Diversity research can be conducted at multiple levels – while some research analyses organizational-level diversity (e.g., Richard et al., 2004), this research deals with organizational workgroups as the unit of observation.

This thesis follows the refined notions of diversity. Diversity is regarded as an aggregate, group-level construct that describes the degree and the distribution of perceived and objective differences with regard to a specific attribute. Furthermore, diversity at the group-level can be created by team design of formation.

Many authors in the field of diversity research refer to analyses by Cox (1993) and Williams and O'Reilly (1998) arguing that workgroups in organizations have become and will continue to be increasingly diverse in the future. The reasons for the increased diversity are manifold and influenced by major trends, such as globalization, the introduction of legal requirements, the emergence of a knowledge economy, and a socio-demographic change in the most important economies. Building on literature by Cox (1993), Kearney and Gebert (2009), and Wüstner (2006), Figure 15 summarises these major trends affect labor forces and diversity in organizations.

Figure 15: Overview of trends that increase the importance of diversity for organizations



4.2 Theoretical foundations of diversity research

This section examines the theoretical foundations of diversity research. Similarity-attraction, social identity and categorization, and faultlines theories are introduced first as the three perspectives generally predict negative effects of diversity in groups and organizations. Thereafter, human cognition, information processing and resource-based theories are introduced as they describe in general positive aspects of diversity, as suggested by the “value-in-diversity” perspective (e.g., Cox, 1993). Eventually, an overview of various further diversity theories will be given.

4.2.1 Similarity–attraction theory

Starting from establishing a basic relationship between the proportion of similar attitudes and the attraction towards a stranger, Byrne (1971) has formulated with similarity-attraction theory a fundamental theory for diversity research. In a series of empirical studies, he establishes that (perceived) similarity in attitudes and opinions, race and other physical cues, as well as prestige and status affect the attraction towards another person. Similarity is supposed to be rewarding, while dissimilarity, in contrast, is considered as punishing (p.134). This argument stems from reinforcement theories as the most general explanatory concept in attraction theory (p.267). When another person indicates that his or her perceptions and concepts are congruent with one’s own, it is perceived as validating the individual’s position and as a rewarding interaction. On the other hand, it also implies that dissimilar perceptions and concepts are perceived as challenging the own perspective, which results in negative sensation of punishment. Consequently, similarity in backgrounds, experiences and values make interactions between individuals easier, positively reinforcing, and more desirable (Williams & O'Reilly, 1998).

Although the similarity-attraction theory was not originally intended to focus on social groups (van Knippenberg & Schippers, 2007), it was often applied in group and organizational contexts. Byrne (1971) refers to several group-level studies that have shown that dissimilarity leads to rejection and lower perceived attractiveness of group members. Furthermore, similarity–attraction theory is one of the initiating theories for organizational demography research (McCain et al., 1983; O'Reilly et al., 1989; Pfeffer, 1983; Zenger & Lawrence, 1989). For instance, McCain et al. (1983) hypothesize that demographic variables impact employee turnover by complicating communication and increasing the likelihood of conflict between members. In that study, similarity in tenure was suggested to converge with similarity of outlook and interpersonal attraction within a group. They found that turnover of

academic personnel was associated with the extent of identifiable differences in the organizational units' demographic distributions.

After reviewing 40 years of diversity research, Williams and O'Reilly (1998) conclude that dissimilarity mainly and consistently provokes negative effects of process and performance losses, including less communication, less frequent interaction, and higher turnover rates. The predictions of the effects and outcomes from similarity–attraction theory resemble to those by social identity and social categorization theories (Williams & O'Reilly, 1998). Both theories will be described in the following section.

4.2.2 Social identity and social categorization theory

Social identity theory departs from the idea that individuals in social contexts define themselves in relation to others and groups. The self-definition is based on social categorizations which is a cognitive process of grouping social objects or events according to their equivalence with regard to an individual's actions, intentions, and systems of beliefs (Tajfel, 1981, p.254). In other words, social categorization leads to perceive other persons not as unique individuals but as interchangeable members of social categories or groups (Turner, 1984). Social categorization is a cognitive process that enables individuals to structure and reduce the information inflow that is constantly perceived by humans. Furthermore, it facilitates the gaining of additional information about other people by inferring from their (perceived) membership in a social category to other characteristics (Hastedt, 1998).

Tajfel (1981) outlines that the mechanisms of social categorization are particularly important in all distinctions between “us” and “them”, because individuals distinguish between their own group (“ingroup”) and others (“outgroup”). Conversely, it implies that an individual's self-concept or identity is also defined in reference to the (non-)membership in a social group (Tajfel, 1981). The self-definition is referred to as the social identity of a person. Tajfel (1981, p.255; 1982, p.24) defines social identity as *„that part of the individuals' self concept which derives from their knowledge of their membership of a social group (or groups) together with the value and emotional significance of that membership“*. Hence, the relationship between an individual and a group is considered as an interaction – an individual is part of a group, but the group is also part of the individual because the socially shared concept of the group is cognitively represented within the individual as his or her social identity (Hastedt, 1998).

In a series of “minimal group”-experiments, in which social categorization processes were triggered based on abstract aspects as e.g. preference for painters, Tajfel et al. (1971) have shown that social categorization is sufficient for cognitive and behavioural consequences of stereotyping and intergroup discrimination. Because every individual is expected to strive for a positive self-concept (Tajfel, 1981), membership of or identification with a social group only remains as long as it contributes to a positive social identity (p.256). A positive social identity is relative and relies on comparisons. Studies have shown that a necessary positive distinctiveness manifests in an ingroup-favoring-bias and discrimination of the outgroup (Hastedt, 1998; Tajfel & Turner, 1986). The aspect of how individuals and groups pursue a positive social identity and its influence on intergroup behaviour are at the core of social identity theory (Hastedt, 1998; Hogg & Terry, 2000).

In the mid 1980s, Turner and colleagues extended the social identity theory by developing the social categorization theory (Hogg & Terry, 2000). Social categorization theory is seen as an extension of social identity theory that details the social cognitive processes which generate social identity effects (Hogg & Terry, 2000). Whereas social identity theory assumes that the social categorization lead to intergroup bias and a social identity, social categorization theory investigated how the social identity is generated (Hastedt, 1998).

In this perspective, the self-concept is perceived as a cognitive structure that comprises a person’s knowledge about him- or herself (Hastedt, 1998). It includes a personal and a social identity (Turner, 1984). The social identity in Turner’s (1984) view is the sum of a person’s social identifications. The personal identity refers to self-descriptions of personality traits, individual differences, and specific attributes of an individual as e.g., feelings, interests, or bodily characteristics. With the salience of the membership in a specific social group, the self-concept switches from a personal identity to a social identity (Hastedt, 1998). Thus, other people are no longer perceived as unique individuals but stereotyped as interchangeable members of a group. Likewise, individuals depersonalize themselves in a self-stereotyping process and define themselves as interchangeable members of a group due to social categorizations (Turner, 1984). The social categorization of the self cognitively assimilates the self to the in-group prototype and depersonalizes the self-conception (Hogg & Terry, 2000). Turner (1984) argues that it is the cognitive redefinition of the self from unique attributes and a personal identity to shared social category membership and associated stereotypes (the salient social identity) that mediates group behaviour. Hence, social categorization processes of members are expected to produce normative behaviour, stereotyping, ethnocentrism, but also positive in-group feelings, cohesion, altruism, and empathy, as well as collective behaviour and shared norms between members of a group

(Hogg & Terry, 2000). In contrast to similarity-attraction theory, Turner (1984) expects similarity among people as an important basis for group formation rather due to its role as a cognitive cue to social categorizations than its effects on interpersonal attraction.

Demographic variables, such as gender, race, ethnicity, age, and nationality are often used as social categories because of their visibility (Pelled, 1996; Tsui et al., 1992; Williams & O'Reilly, 1998). Williams and O'Reilly (1998) found that articles applying a social identity or categorization theory in diversity research have found effects of stereotyping, anxiety, decreased satisfaction, increased turnover, less cohesion and cooperation, and higher levels of conflict. Although Tajfel developed this theory to study intergroup relations, it was largely applied to intra-group relationships (Williams & O'Reilly, 1998). In sum, social categorization in diversity research within groups and between groups is associated with largely negative effects of diversity.

4.2.3 Faultline theory

Faultline theory moves away from investigating single diversity attributes. It assumes that the development of subgroup identities is determined by the extent of within-subgroup similarities and between-subgroup differences, i.e. how many attributes align themselves in the same way (Lau & Murnighan, 1998). This perspective conforms to social categorization theory that postulates that the probability that groups fall apart into subgroups is determined by the comparative fit of subgroup categories (Turner, 1987). The comparative fit increases when multiple dimensions (e.g. gender, age, or functional background) converge in a team. Such an alignment of diversity variables, then, introduces dividing lines within a workgroup – so-called faultlines.

Lau and Murnighan (1998) argue that because one characteristic may be more or less salient depending on the context, examining only one demographic attribute may result in missing potential impacts from other diversity attributes. Furthermore, adding up or combining different singular diversity attributes to form a faultline is expected to yield bigger effect sizes in quantitative research. The faultline approach, however, requires a composite measure that integrates different diversity attributes with their underlying scale levels. Since the degree of faultline strength increases with the alignment and number of aligned individual attributes (Lau & Murnighan, 1998), a measure was developed by Thatcher et al. (2003) as “fau”. Later, Zanutto et al. (2011) have developed an additional measure of faultline distance (as applied in Bezurukova et al. (2009)) to account for the extent to which subgroups diverge.

Faultline theory builds on predictions from social categorization theory of emerging subgroups and intergroup bias. Lau and Murnighan (1998) assume that demographic faultlines are created at the beginning of the group development process. Because of their immediate visibility, demographic faultlines may serve as prompt cues for salient social identities. With regard to their effects in groups, Lau and Murnighan (1998) predict negative outcomes as high conflicts, low cohesion, reduced vocalization of minority subgroups' opinions and lower overall group effectiveness.

Empirically, the results from faultline research are less consistent (van Knippenberg & Schippers, 2007). Some studies show disruptive and negative, but others also neutral or even positive influences by faultlines. For instance, negative effects for social category faultlines were reported by Bezrukova et al. (2009). They show that faultline strength moderated by high faultline distance yields lower levels of group performance. Furthermore, although information-based faultlines had no significant direct effects on group performance, their interaction with faultline distance has shown negative effects. Polzer et al. (2006) found that geographical faultlines resulted in higher conflicts and lower trust within groups. Moreover, faultlines are associated with less communication and lower effectiveness (Lau & Murnighan, 2005).

In the same study, however, Lau and Murnighan (2005) also discovered functional outcomes that members in high-faultline groups rated their satisfaction and psychological safety more positively. Thatcher et al. (2003) established a curvilinear relationship of faultlines to conflict and performance - groups with very low or very high faultlines exhibit more conflicts and lower performance than moderate faultlines groups. The effects were highest when groups were equally divided into two subgroups as also found by Polzer et al. (2006).

The theoretical foundations of similarity-attraction, social identity and categorization theory, as well as faultline theory have in common that they predict and (largely) have found yield negative effects in diverse groups. While these theories are often combined to explain negative diversity effects, the following theoretical foundations are used to predict and explain more positive outcomes of workgroup diversity.

4.2.4 Cognition theory

Building on cognition theory, Austin (1997) developed a cognitive processing framework for group diversity. It focuses on the mechanisms and interrelations of perceiving and processing information, as well as storing it as knowledge upon which individual and group

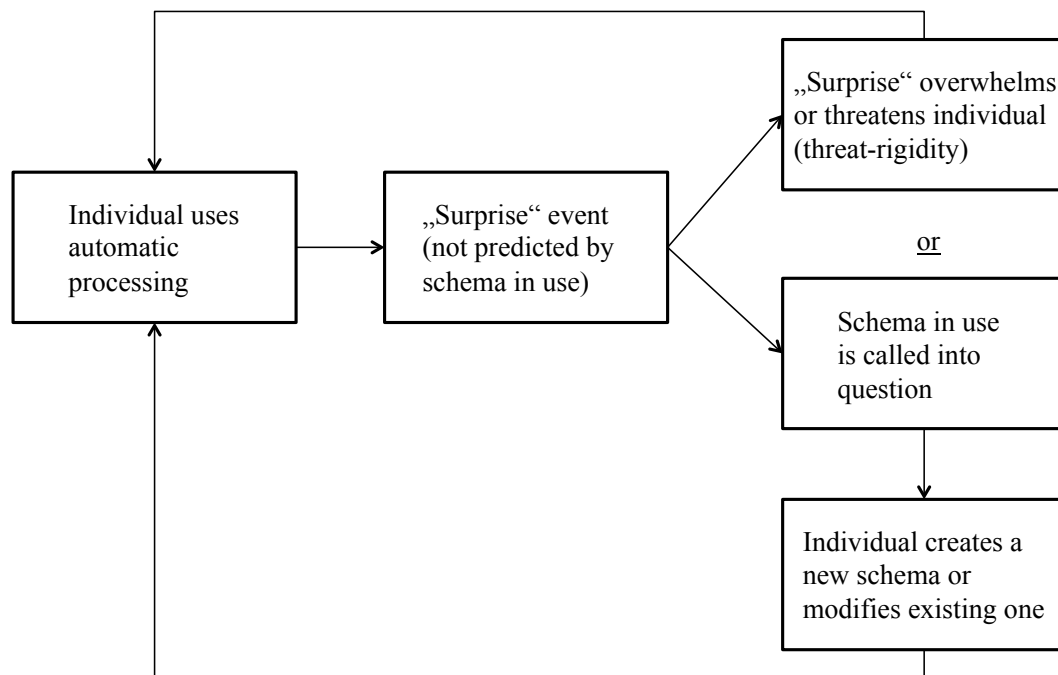
actions can be based. Cognition theory developed the concept of mental frames or schemas that help people to organize, structure, and make sense of perceived information (Austin, 1997). Schemas are assumed to evolve out of experience and previous learning (p.343). They provide situational forecasts as reference for action and perception (Louis & Sutton, 1991). When people perceive situational cues, specific schemas that include knowledge about the situation are activated and used to interpret and structure the information about that situation.

Scripts are another concept of cognition theory and seen as special types of schemas that bridge “*the gap between cognition and action*” (Austin, 1997, p.343). They are considered as connecting knowledge about a specific situation to behaviour by linking the interpretations of those situations to action recommendations.

Their benefit is to allow processing large amounts of information in short time (Austin, 1997). However, the disadvantage associated with the use of scripts is that cognitive systems are often closed and disregard new information due to selective perception. This automatism may result in decision-making without consideration of all relevant information, thus leading to rule-guided and context-insensitive behaviour (p.344).

People can switch from automatic treatment to a “conscious mode” when situations are novel (i.e., the inability to fit perceived information to existing schemas), when discrepancies between own estimations and external information become obvious (e.g., through feedback), and by deliberate request for active thinking (Louis & Sutton, 1991). Conscious mode is associated with active thinking and awareness, when individuals actively seek for new contextual information to be combined with prior knowledge to understand a situation (Austin, 1997). In this process, a new schema is developed (Austin, 1997) or existing schemas are reframed in a learning process (Louis & Sutton, 1991), as depicted in Figure 16.

Figure 16: Process for developing new schemas (Austin, 1997, p.346)



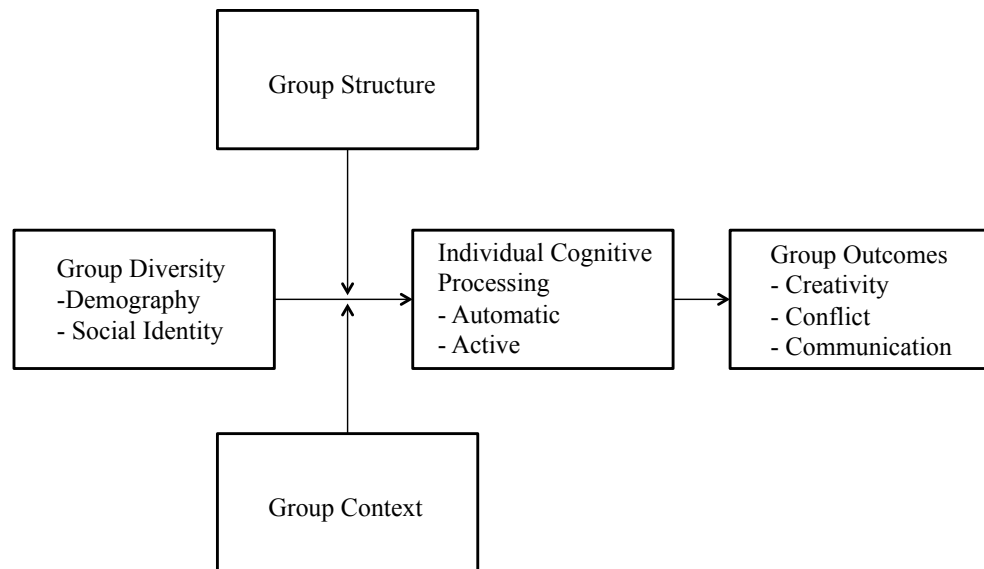
Louis and Sutton (1991) argue that although individuals are holders of cognitive schemas or scripts, they can be studied at the group-level. They reason that members of a social system (as groups are, see above) develop shared cognitive structures. Referring to examples of organizational culture and group norms, Louis and Sutton (1991) describe that team members rely on group-based packages of meaning (group schemas) in (automatic) cognitive processing. In the context of developing group norms, Bettenhausen and Murnighan (1991) identified four basic underlying processes: First, individual team members initially approach an unfamiliar task that each individual member tries to make sense of. Thereafter, individual members enact and interact their individual scripts, by which a third process of interaction causes the emergence of a dominant group script through challenging and questioning individual scripts. The fourth and final process involves the cementing of the dominant norm within the group.

Building on a review of group diversity, Austin (1997) attributes diversity effects to cognitive processes used by individual group members. Individual cognitive processes are expected to accumulate at the group level, and diverse individual schemas available to the group are expected to yield “surprise-effects” that trigger active thinking mode (p.352). Discrepant interpretations and actions of team members stimulate awareness, comparison, and critical inquiry of schemas and their suitability, and the resulting active processing of information is expected to stimulate group creativity and learning (Austin, 1997).

Austin’s (1997) theory furthermore implies that the unpredictability and incompatibility of individual reactions might trigger intragroup conflict that may raise the anxiety and

uncertainty level of group members. If that level is too high, team members will switch back to automatic cognitive processing. Similarly, an uncertain or threatening environment reduces the level of active processing and therewith creativity within a group (Austin, 1997), an argument also supporting the research on psychological safety in group learning environments (Edmondson, 1999). Austin's (1997) model is depicted in Figure 17.

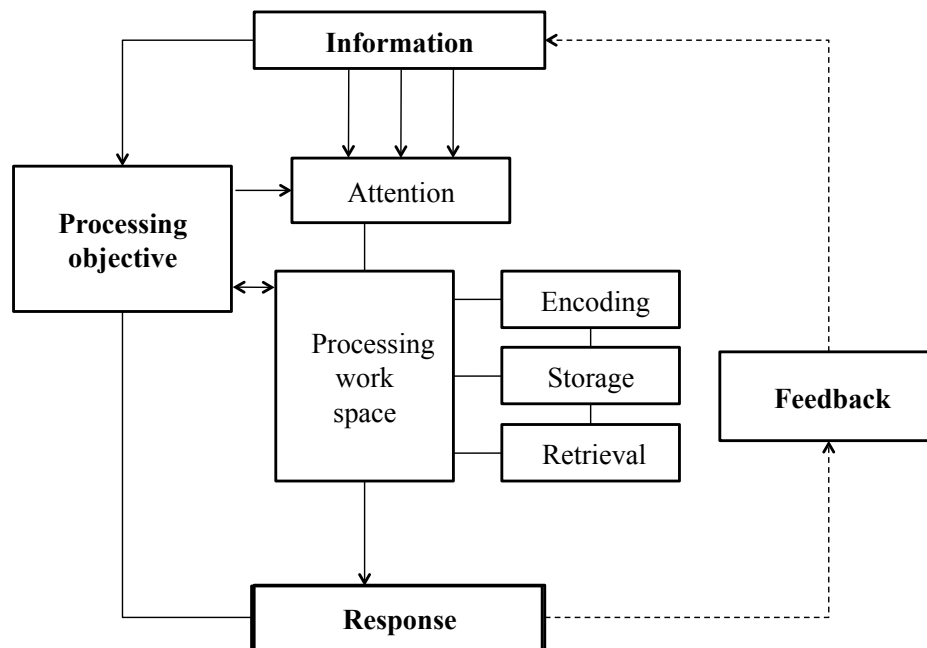
Figure 17: Austin's (1997, p.351) cognitive model of group diversity



4.2.5 Information processing theory

Hinsz et al. (1997) assert that groups are increasingly perceived as information processors. Group information processing involves the degree to which information, ideas, or cognitive processes are shared among members. Furthermore, the sharing of information can be related to individual- and group-level outcomes. The authors base their theory on a generic model of information processing that involves an initial acquisition of information from an interaction with the world. The information is embedded into context and combined with objectives when being brought to attention. Thereafter, the information is encoded (i.e., structured, interpreted, evaluated and transformed into a representation), stored or later retrieved, and integrated with a schema to produce a response. Such a response may be to make decisions, conclusions, and evaluative judgements, or to find a solution that may generate feedback and new information. This generic model of information processing is shown in Figure 18.

Figure 18: Generic information processing model (Hinsz et al., 1997, p.44)



In diverse groups, Hinsz et al. (1997) reason, each member treats information differently, and the different perspectives team members have influence the information processing objectives. Furthermore, different perspectives relate to a different approach to a cognitive task. Because individual team members may not attend all relevant information, groups with several (diverse) members have a greater capacity to attend the whole information. To focus a group's attention to a particular information, it is usually postulated that it needs to be shared and raised by at least two members (p.47).

With regard to encoding an information, Hinsz et al. (1997) expect that individual members produce different meanings to the information. In that case, the team lacks a shared representation of that information but has various options. Or, if the group has a shared mental model, members may treat the information similarly. In the first case, a group may develop and consider more alternatives (p.48), thoroughly discuss the information, and have a better chance to arrive at a useful solution. The same is suggested in evolutionary theory where the number of variations a unit offers is related to chances of successful selection (Campbell, 1960). In the second case, a shared mental model may increase the efficiency and effectiveness of a group and its members' interactions if the mental model is appropriate and accurate (Hinsz et al., 1997).

When it comes to storing information, research indicates that groups are superior to individuals because of their size – i.e., multiple members in a group have better access to information and therefore a greater storage capacity (Hinsz et al., 1997). From a transactive

memory system perspective, different expertise of group members allows a more specialized and focused information storage and remembering.

When stored information needs to be retrieved, groups structures are advantageous since members can mutually identify and correct erroneous memories (Hinsz et al., 1997). Furthermore, remembered information by one member may cue or stimulate the recall of other members, hence may produce synergistic process gains (p.49). Furthermore, diversity in groups (regarding majority and minority constellations) is argued to relate to more divergent information processing. The authors conclude that forms of diversity yield diversity in perspectives and the effect may be twofold: differences in mental representations and processing objectives may cause disagreements, tensions and conflict but also divergent thinking, multiple perspectives and an increasing depth of information processing capability (p.54).

In sum, cognition theory and information processing theory assume that diversity is associated with the availability of schemas and perspectives which results in a greater connectivity for new information, higher absorptive capacity, more active processing, increased creativity and overall behavioural repertoires (Harrison & Klein, 2007). The compositional advantage of diverse teams was for instance empirically verified in research by Tziner and Eden (1985) and has since been widely replicated (Williams & O'Reilly, 1998).

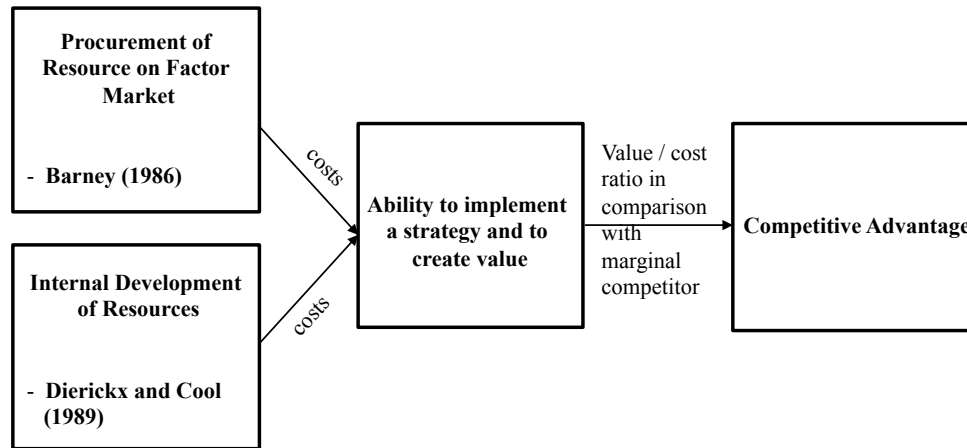
4.2.6 Resource-and competency-based view of the firm

The resource-based view of the firm has originally been formulated in strategic management, with the aim to understand competitive advantages and to figure out how they can be systematically created (Meyer, 1991). It has since been increasingly adopted in other research areas including small group research. Richard (2000) was among the first to apply resource-based theory to diversity research. He argues that diversity in the workforce needs to reflect the diversity in the society and among customers.

Basically, the resource-based view strives to explain why and how firms are able to create above average returns. Firms develop strategies to achieve favourable competitive positions for which they depend on resources to implement them (Barney, 1986). Generally spoken, value is created when revenues on account of a strategy outweigh the costs for the resources used for a strategy's implementation. Competitive advantages exist when a firm's resource

create more value than their competitors' (Peteraf & Barney, 2003). The mechanism to create competitive advantages is shown in Figure 19.

Figure 19: Mechanisms to create competitive advantages in the resource-based view



Because it is necessary that competitive advantages are sustainable, valuable resources need to be rare, inimitable and non-substitutable (Barney, 1991). Rareness inhibits firms from applying the same strategies that have proved to be successful with their competitors. If valuable resources were available abundantly, competition would increasingly become perfect, and economic rents diminish to zero. Inimitability and non-substitutability refer to the expenses competitors have to assign to build up equivalent resources (Barney, 1991). Non-substitutability means that there are no alternative resources rendering the same effects with regard to the execution of a strategy. Inimitability is assumed to derive from unique historical conditions (Arthur, 1989), causal ambiguity (Lippman & Rumelt, 1982) and social complexity (Dierickx & Cool, 1989).

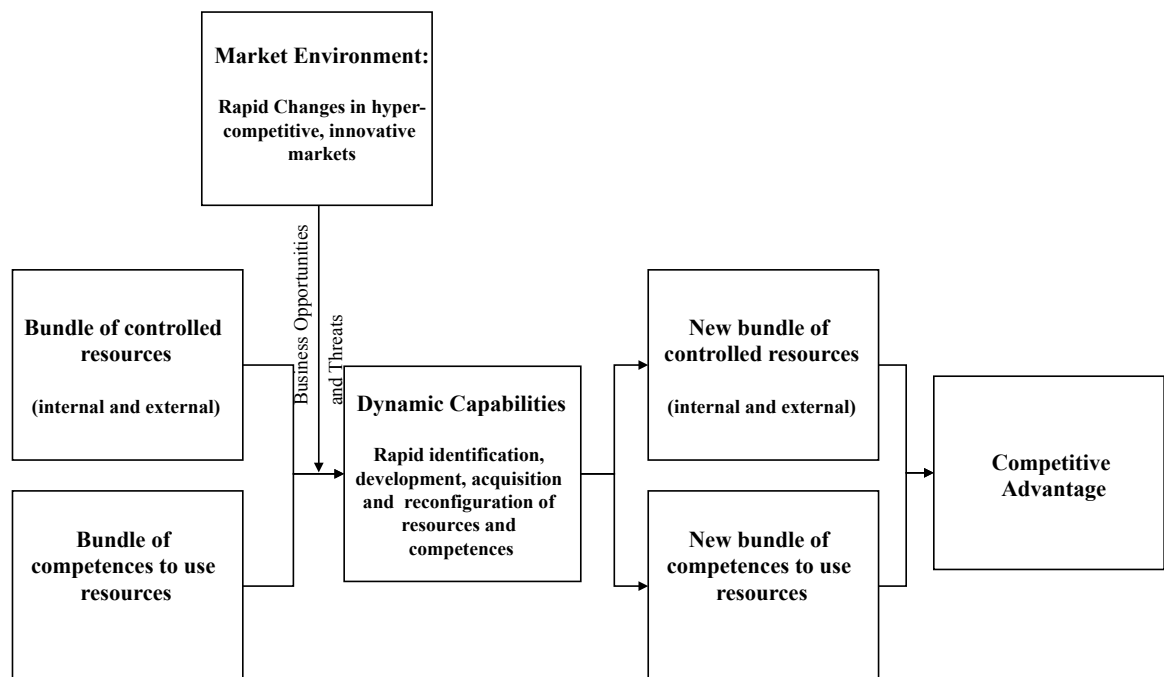
The logic to create sustainable competitive advantages works if external opportunities and threats were constant. However, when the external environment varies, the return on the pursued strategies varies and so does the value of the resources used to implement them. It has been criticised that assuming stability of the external environment does not meet realities of management (Priem & Butler, 2001). Furthermore, it is criticised that the resource-based view disregards the processes by which resources generate competitive advantages. The mere focus on value of resources and isolating mechanisms disregards how resources create competitive advantages (Priem & Butler, 2001).

These criticisms led to the developments of the competencies-based and dynamic capabilities views of the firm. The competencies-based view focuses on processes of using, combining and developing resources. It explicitly addresses the exploitation of the potentials

inherent in resources. A firm's competency endowments are assumed to be the decisive criterion for its strategic options, e.g. its marketing campaigns, products or services (Prahalad & Hamel, 1990).

The dynamic capabilities view extends the competencies-based by assuming that competencies are transient (Eisenhardt & Martin, 2000), and that the environment is principally dynamic (Eisenhardt & Martin, 2000; Teece et al., 1997). The dynamics of markets (external) and of organizations (internal) lead to limited life-spans of competencies (Helfat & Peteraf, 2003), and firms must constantly change their resource and competency endowments to adapt to market situations and to take advantage of business opportunities (Teece et al., 1997). Only through continuous adaptation and reconfiguration of resource and competency arrangements can competitive advantages be generated in dynamic markets - by adapting to market changes (Teece et al., 1997) as well as by creating them (Eisenhardt & Martin, 2000). The logic is shown in Figure 20.

Figure 20: Creating sustainable advantages in the dynamic capabilities view



From a diversity research perspective, the representation of diverse backgrounds within the company can create value for the firm through better targeting specific customer segments and because the diversity of skills may yield higher creativity and innovativeness (Richard, 2000). Richard (2000) argues that the inimitability of human resources stems from the socially complex mix of talents. Because of the complex relationship between individual team members, it is hard to identify for a competitor which combination of talents produces a high effectiveness of an organisation – in other words, there exists causal ambiguity.

Furthermore, Richard (2000) argues that diversity (or more specific: racial / cultural diversity) diversity management is rare and impacts on firm performance. Empirically, no evidence was found for a direct effect on firm performance, but racial diversity was positively related to return of equity, productivity and market performance moderated by firm growth strategy. This conforms to predictions from contingency theory that flexibility and innovative thinking (arguments for diversity) are especially useful in growing and exploring firms.

Taken together, the three theoretical perspectives on diversity are often referred to as the “value in diversity perspective” (e.g., Williams & O'Reilly, 1998), because they provide theoretical argumentation for positive outcomes from diversity. Besides these six (core) theoretical foundations there are various further theories that have been used in diversity research. These theories are not in the focus of this research since they are mostly applied from a disparity perspective (Harrison & Klein, 2007) which is not empirically treated in this research. Therefore, these theories will only be briefly summarized in the next subsection to provide a more complete picture on diversity research.

4.2.7 Other diversity theories

The three other diversity theories treated here are social stratification theory, relative deprivation theory, and tournament theory. Social stratification theory refers to differentiations between levels within a society (Ravlin & Thomas, 2005). The different layers within a society include social and economic inequalities (Blau, 1977). Moving between them is difficult, described as a reduced social mobility. The inequalities with regard to valued resources extend into organizations, e.g. in explaining career opportunities and their accordance to social classes (Ravlin & Thomas, 2005).

Although social stratification theory can be applied to diversity in organizations and workgroups, it is largely unstudied in these contexts (Harrison & Klein, 2007; Ravlin & Thomas, 2005). In combination with social categorization theory, Ravlin and Thomas (2005) argue that status of individual members can be achieved by personal attributes (e.g., competence) and ascribed from category membership (e.g., race or gender). When diverse groups ascribe status of members according to traditional social stratifications, diversity may have negative effects on individuals, group processes and performance (p.982). In diverse groups, for instance, Christie and Barling (2010) have recently shown that status inequality yields poor performance when low-status members are uncooperative.

Relative deprivation theory stresses the subjective dimension of inequality. As known from social categorization theory, individuals compare themselves to others and assess similarities and differences. When people socially compare reward distributions, their judgement of comparative fairness may induce feelings of deprivation (Greenberg, 1987). Perceiving oneself better off evokes satisfaction, whereas perceiving oneself disadvantaged triggers sensations of deficit, dissatisfaction, anger, and frustration (Aronson et al., 2008). Research on relative deprivation in organizations has for instance studied women in high-ranked positions that compare themselves not to women in low-ranked positions but to men in equally high-ranked position. Because of usually lower pay and less privileges, they often perceive themselves as deprived (Greenberg, 1987). In groups, relative deprivation is expected to lead to conflict between subgroups (Güttler, 2003).

Tournament theory explains inequality when valued resources are awarded as prices to winners of contests. Lazear and Rosen (1981) put forward that the distribution of valued resources (e.g., payment) between hierarchical levels cannot be explained by performance or productivity alone, but as results of an on-going tournament. The winner is awarded a hierarchical position and the corresponding valued resources (e.g., payment) as a price. Tournament theory has largely been studied in the context of top management teams, predicting individual motivation gains through incentives, but also dysfunctional effects at the group level, e.g. competition, rivalry, and non-cooperative behaviour that negatively influence firm performance (Fredrickson et al., 2010).

As can be seen, social stratification theory, relative deprivation theory, and tournament theory predominantly predict negative outcomes of diversity. When inequality and competition reaches dysfunctional levels, cooperative behaviour is inhibited, and resentment, suppression, rejection, resignation, conformity, silence, and withdrawal emerge (Harrison & Klein, 2007).

This section gave an overview and introduced a multitude of theories, which have been used to hypothesize and explain effects from diversity. The next subsection further investigates the rationale for diversity research, describing which effects diversity can have in organizational contexts and why it needs to be actively managed.

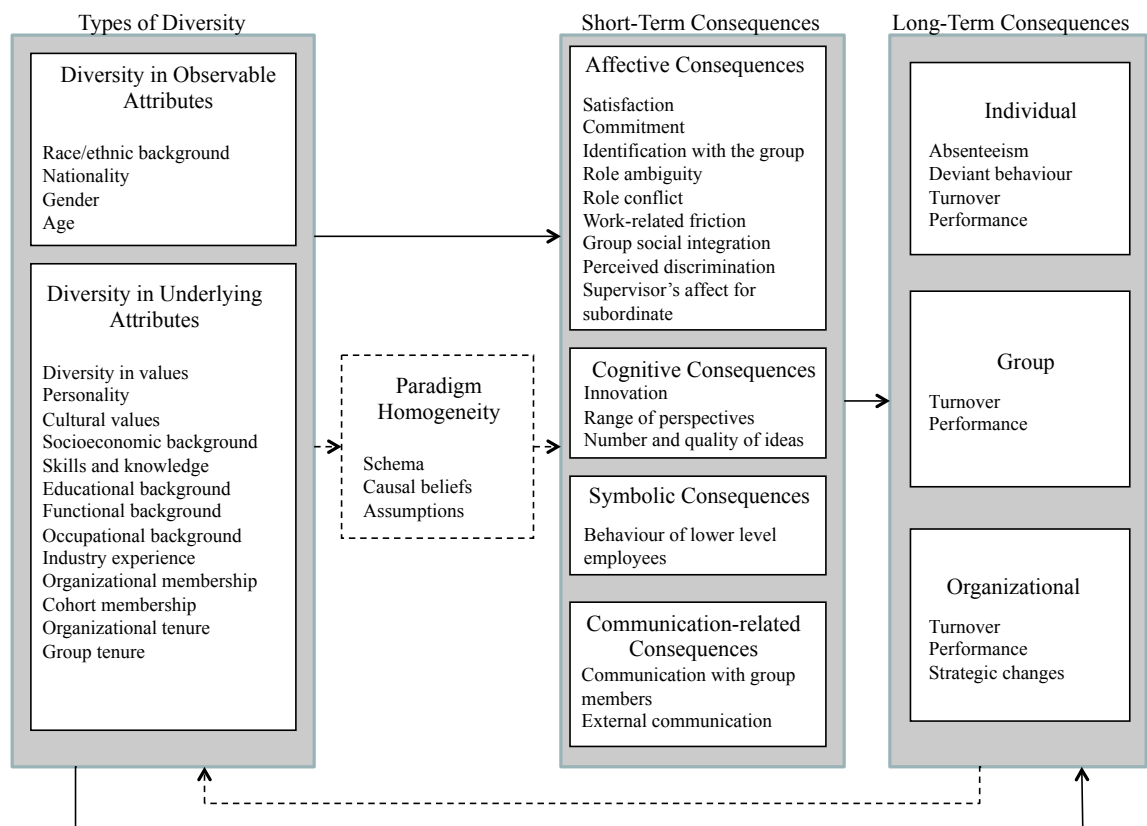
4.3 Diversity effects in organizations

Within an increasingly diverse workforce, the business case for diversity research arises from the fact that the dynamics of diversity affect individuals, groups, and organizations.

Based on the above-introduced theories, researchers have empirically studied effects of diversity at different levels. Review articles by Milliken and Martin (1996), Williams and O'Reilly (1998), Jackson et al. (2003), and van Knippenberg and Schippers (2007) allow an overview of diversity effects that – in sum – emphasize the importance of studying diversity in management research.

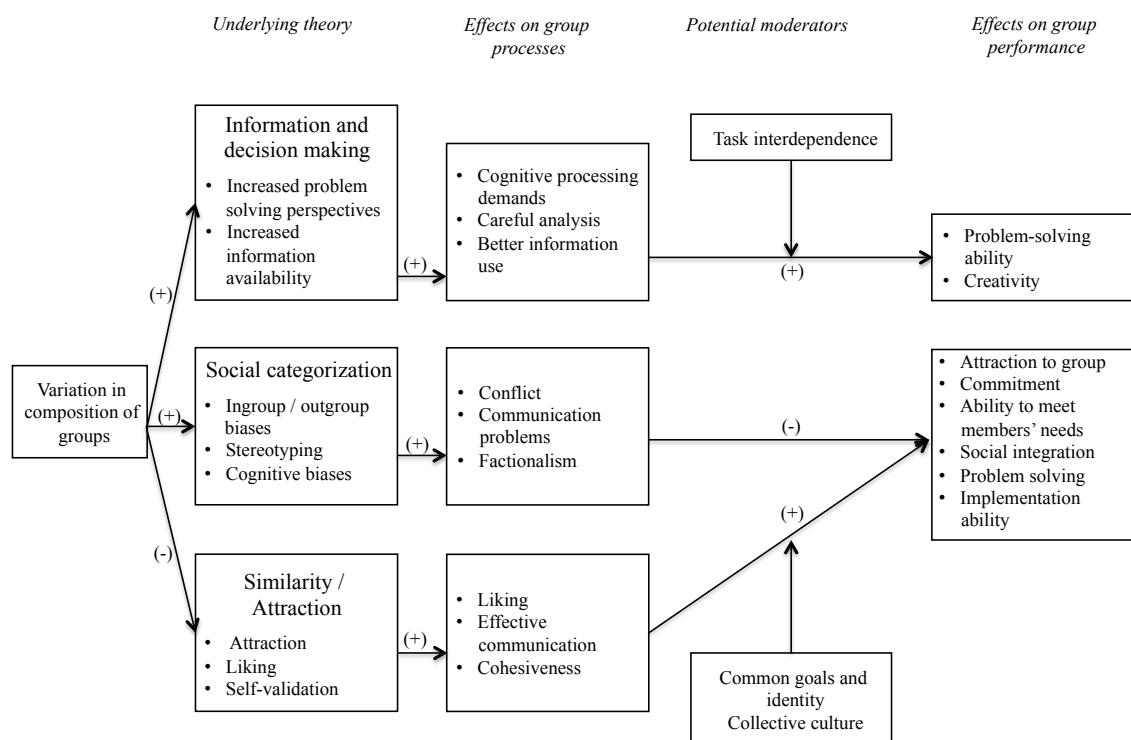
In their review, Milliken and Martin (1996) differentiate between short-term and long-term consequences of diversity in workgroups. Short-term consequences include affective (satisfaction, commitment, identification, or integration), cognitive (range of perspectives, innovativeness, number and quality of ideas), symbolic (behaviour of lower-level employees), and communication-related consequences (internal and external communication of members). These short-term effects influence individual (absenteeism, turnover, and performance), group (turnover, performance) and organizational outcomes (performance or strategic change) in the long run. Milliken and Martin's (1996) model is summarized in Figure 21.

Figure 21: Diversity effects in organizations (Milliken & Martins, 1996, p.418)



Williams and O'Reilly (1998) focus their review on effects at the group-level. From different theoretical perspectives on diversity research, they find effects on group processes (cognitive processing, information use, conflict, communication, liking, and cohesiveness) and on group performance (problem solving ability and creativity vs. attraction, commitment, social integration, and implementation). They come to the conclusion that there exists substantial evidence that diversity in a group's composition can have important effects on the group's functioning. These effects are shown in Figure 22 and emphasize the importance of managing diversity. As can be seen, Williams and O'Reilly (1998) suggest that diversity has direct and indirect (mediated and moderated) effects. Hence, a classic I-P-O-model of group effectiveness seems inadequate to study diversity. Rather, a dynamic and interrelated model group effectiveness that includes mediating and moderating effects seems suitable for diversity research (e.g. from Salas et al, 2005 or Ilgen et al., 2005). Williams and O'Reilly (1998) postulate that further research shall analyse the combination of different types of diversity with their interrelated effects on group processes and performance.

Figure 22: Diversity theories and their effects (Williams & O'Reilly, 1998, p.89)



Jackson et al. (2003) developed a multi-level framework for the dynamics of diversity in organizations. They expect that diversity introduces reactions by individuals that relate to their emotional states and affects (cohesion, satisfaction, commitment), their individual behaviour in teams (communication, cooperation, conflict), and in the long-run their

performance, promotion, pay, and/or turnover. The individual dynamics accumulate and interfere in dyadic and group relationships and interactions. In this way, they also interrelate with the organizational and wider societal context.

In sum, many authors conclude after reviewing or conducting own empirical diversity research that there are no consistent main effects for diversity. Jackson et al. (2003) state that their review yielded few discernible patterns in the results. For most diversity dimensions, the findings are mixed. Likewise, Harrison and Klein (2007) attest that “*the payoff from this profusion of research has been disappointing [...]. Cumulative findings have been weak, inconsistent, or both*“ (p.1199). This diagnosis is shared by all relevant studies over the last years, and many authors speak of diversity as a “double-edged sword” (e.g., Kravitz, 2005; Milliken & Martins, 1996; Polzer et al., 2002), delivering both positive and negative effects at the same time. Gebert (2004) interprets cumulative findings of empirical research as a zero-sum game in which positive effects represent a potential that is levelled out by negative effects. Bezrukova et al. (2009) call in the same context for a more comprehensive approach to study group diversity. According to Joshi and Roh (2009), a more comprehensive approach requires the integration of context as mediating factors.

4.4 Forms of diversity

Because of the different theoretical foundations and results from diversity research, it seems to be established that diversity – in contrast to what definitions may suggest – is no clear-cut formation but has shaped up as complex and multidimensional. In order to facilitate the understanding of various approaches of diversity research, different forms of diversity have been formulated. Furthermore, the amount of variables, which have been studied as attributes of diversity, are almost unlimited. Hence, researchers have started to group diversity attributes and approaches to identify common patterns in diversity literature. The most commonly distinguished forms are surface- vs. deep-level diversity, task- vs. relation-oriented diversity and the typology of separation, variety and disparity. These forms of diversity and their implications will be described in the next subsections.

4.4.1 Surface- vs. Deep-level diversity

Several authors have differentiated by the level of diversity attributes into “surface-level”- and “deep-level”-diversity (Harrison et al., 2002; Kearney et al., 2009; Klein et al., 2011). Surface-level diversity includes visible demographic attributes, as e.g. age, race, ethnicity,

and gender (Harrison et al., 2002). Because individuals use readily observable characteristics to classify themselves in social categories, surface-level diversity is often associated with similarity attraction, social identity and social categorization theories (Harrison et al., 2002). Consequently, (perceived) surface-level diversity is related with negative effects on team social integration (Harrison et al., 2002). Two studies, however, could not show a significant direct effect of (perceived) surface-level diversity on team effectiveness (Harrison et al., 2002; van Emmerik & Brenninkmeijer, 2009).

Deep-level diversity includes more covert aspects as e.g., the environmental imprint (education, functional background, hierarchical level, group and organizational tenure) and personality attributes (values, beliefs, attitudes, and the “big five” personality dimensions) that cannot be observed (Harrison et al., 2002; van Emmerik & Brenninkmeijer, 2009). Instead of being seen and perceived, information about deep-level diversity characteristics is communicated through verbal and nonverbal behaviours (Harrison et al., 1998). In their interactions within the workgroup, members gather information and learn about each others’ subsurface characteristics (Harrison et al., 1998). Deep-level diversity research has often applied similarity – attraction theory to hypothesize and explain negative effects on team processes and effectiveness (Harrison et al., 1998; van Emmerik & Brenninkmeijer, 2009). Empirically, (perceived) deep-level diversity was found to negatively influence team social integration (Harrison et al., 2002) and performance (van Emmerik & Brenninkmeijer, 2009). Because surface-level and deep-level diversity differ in their observability, Harrison et al. (1998) have found that increasing time of cooperation between members (team tenure) lessens the influence of surface-level and amplifies that of deep-level diversity.

Researchers often apply surface-level characteristics as surrogates for deep-level diversity characteristics because they can be assessed more easily – a fact that is criticised by Harrison et al. (1998) and van Emmerik and Brenninkmeijer (2009). Their studies have shown and replicated different effects of surface- and deep-level diversity. The ease of observing surface-level attributes has led to an emphasis on these characteristics in the course of diversity research (van Emmerik & Brenninkmeijer, 2009). As criticised by Jackson et al. (2003) and Kirkman and Shapiro (2005) too little is known about the effects of the deep-level diversity in teams.

4.4.2 Task-related and relations-oriented diversity

In addition to the observability of diversity characteristics, several researchers differentiate between task-related and relations-oriented diversity (e.g., Jackson et al., 1995). When

diversity is associated with a team's objectives, attributes are considered as task-related. In contrast, diversity attributes that are brought about and considered to influence the more general social relationships are considered as relations-oriented (Jackson et al., 1995). Task-related attributes include organizational or team tenure, department or unit membership, educational level, or knowledge, skills and abilities. Relations-oriented diversity characteristics involve sex, culture, age, religious or political orientations, social status, values, or personality characteristics (Jackson et al., 1995).

In general, task-related diversity is considered as beneficial, as diversity attributes are aligned with task requirements and corresponding cognitive processes (e.g., Kearney et al., 2009). In this regard, task-related diversity is associated with generating alternative solutions and information search, as well as identifying, evaluating, and prioritizing decision alternatives (Jackson et al., 1995; Joshi & Roh, 2009).

In contrast, relations-oriented diversity attributes are associated with functioning at social or affective levels (Jackson et al., 1995). In decision-making, relations-oriented diversity is considered to complicate team processes and interactions (Jackson et al., 2003).

As can be seen, combining various diversity attributes into forms aims at reducing the complexity of diversity research, which is due to the multitude of attributes analysed in research. Grouping them into surface-level vs. deep-level, or task-related vs. relations-oriented diversity tries to identify more general patterns and making more more general predictions about positive and negative consequences within groups and organizations. A more recent and more sophisticated differentiation of diversity forms was presented by Harrison and Klein (2007) and is described in the following section.

4.4.3 Separation, variety and disparity


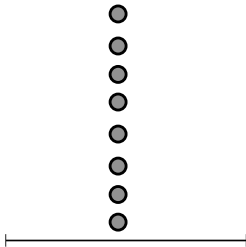
Harrison and Klein (2007) convincingly argue that differences between members of social units with regard to certain attributes may take different shapes or forms. Their taxonomy of diversity forms has been well adopted by a multitude of researchers (e.g., van Knippenberg & Schippers, 2007; Joshi & Roh, 2009; Kearney et al., 2009). The authors identify three typical forms of diversity as separation, variety, and disparity. Each form reflects distinct theoretical foundations, hypothesized effects, scale levels for measurement, and formulae for calculating the degree of diversity.

Separation. Diversity that takes the form of separation is based on horizontal distances between group members regarding particular attributes. Horizontal distances represent differentness of positions, e.g. of attitudes, opinions, or values (Harrison & Klein, 2007). If

all group members share a common position, the team is homogeneous. If positions of group members differ, the team is diverse – or separated - in this respect. Minimum separation occurs in homogeneous teams, maximum separation occurs when members are equally split at opposing ends of the continuum (Harrison & Klein, 2007) as depicted in Figure 23.

This form of diversity has its theoretical foundations in similarity attraction, social categorization, and faultlines theory (Harrison & Klein, 2007). The common notion of these theories is that they all predict negative outcomes of diversity, or more precisely - separation: cooperation and performance of teams suffer from stereotyping, decreased group coherence, increased turnover, reduced communication and learning, and enhanced conflict (e.g., Hogg & Terry, 2000; Jehn et al., 1999).

Figure 23: Key attributes of diversity in the form of separation (adapted from Harrison & Klein, 2007)


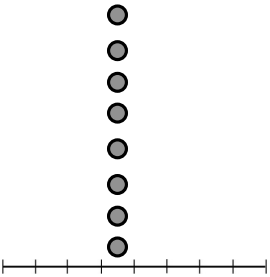
Maximum separation	Minimum separation = homogeneity	Formula
		<p>Euclidean distance (ED):</p> $ED = \frac{\sum \sqrt{\sum (s_i - s_j)^2} / n}{n}$ <p>Standard deviation (SD):</p> $\sqrt{\frac{\sum (s_i - s_{mean})^2}{n}}$

Harrison and Klein (2007) advise that the appropriate scale level for measuring separation is on an interval scale. Common formulae are the standard deviation (SD) or the (mean) Euclidean distance (ED). Both formulae are included in Figure 23. The SD represents the average difference of team members from the team's average on a specific diversity attribute. It is calculated by the root of the accumulated squared distances of team members from the team's average, divided by the amount of team members (n).

The ED, also "relational demography score" (Tsui et al., 1992), represents the difference between one team member and all other members on a specific attribute and is calculated by the square root of the summed squared differences between a member's value on an attribute and the value of each other team member on the same attribute, divided by the total number of team members.

Variety. Diversity in the form of variety bases on the distribution of differences with respect to an attribute among members of a social unit (Harrison & Klein, 2007). It connects the possible quantity of different occurrences (features) of an attribute with the quantity of different occurrences (features) that are realized within a social unit. For instance, the more functional backgrounds exist and the more of them are represented in a group, the higher the variety of this group is with regard to functional backgrounds. Other interesting variety attributes include knowledge, skills and abilities, as well as access to external information, networks and social ties. Minimum and maximum variety are graphically shown in Figure 24, occurring when team members are homogeneous with regard to an attribute (min), or when each possible category is given and equally represented in the team (max) (Harrison & Klein, 2007).

Figure 24: Key attributes of diversity in the form of variety (adapted from Harrison & Klein, 2007)

Maximum variety	Minimum variety = homogeneity	Formula
		<p>Blau:</p> $1 - \sum p_i^2$ <p>Teachman:</p> $-\sum_{i=1}^I P_i * (\ln P_i)$

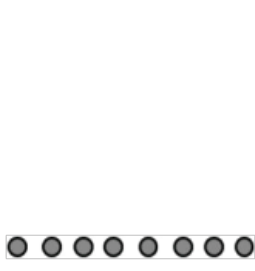
This form of diversity is theoretically explained by information processing and human cognition theory (Harrison & Klein, 2007). These diversity theories share their hypothesized positive outcomes of diversity, or more precisely - variety: information processing capabilities are optimized, access to external knowledge sources is improved (Ancona & Caldwell, 1992), and the behavioural repertoire is broadened (Harrison & Klein, 2007) supposed to leading to higher creativity and more effective decision-making.

Variety is advised to be measured on a categorical scale (Harrison & Klein, 2007). The diversity degree for variety can be calculated by Blau's (1977) inequality index or Teachman's entropy-based index (1980). Blau's index represents the spread of members over available categories, connects the proportion of individuals in each category (P) with the number of possible categories (i), and is calculated by subtracting the sum of all

categories' squared proportions from 1. It increases with the amount of possible categories and when team members are distributed evenly among them. Teachman's index represents the concentration of team members in possible categories and is calculated by the negative sum of the common logarithm of each category's proportion multiplied with each category's proportion. It increases with the variety of characteristics within the team. Both formulae are included in Figure 24.

Disparity. Diversity that takes the form of disparity is based on vertical distances. In a vertical perspective, diversity represents privileged or underprivileged positions between group members regarding particular attributes, as e.g. pay, status, power, prestige, influence, acceptance, or other desired resources that may be unevenly distributed (Harrison & Klein, 2007). Disparity is studied in sociology under the term "inequality" (Blau, 1977). Minimum disparity occurs in case of equal or paretic distribution among team members, maximum disparity occurs when one member outranks all others, as illustrated in Figure 25 (Harrison & Klein, 2007).

Figure 25: Key attributes of diversity in the form of disparity (adapted from Harrison & Klein, 2007)

Maximum disparity	Minimum disparity	Formula
		<p>Coefficient of variation:</p> $\frac{SD}{mean}$ <p>GINI:</p> $\frac{\sum D_i - D_j }{2 * N^2 * D_{mean}}$

This form of diversity is theoretically explained by social stratification (Ravlin & Thomas, 2005), relative deprivation (Aronson et al., 2008; Walker & Pettigrew, 1984) and tournament theory (Lazear & Rosen, 1981). Regarding the appropriate scale level for measurement, disparity is measured on a ratio scale. Harrison and Klein (2007) suggest calculating the diversity degree for disparity by the coefficient of variation or the GINI-index. Both formulae require ratio scaled data sets with naturally fixed zero-points (Bedeian & Mossholder, 2000; Harrison & Klein, 2007). The coefficient of variation represents a scale invariant measure of disparity and is calculated by dividing the SD by the mean. The

coefficient of variation is sensitive to team size (Bedeian & Mossholder, 2000). The GINI-index represents the ratio of the area between the line of equality and the Lorenz Curve to the total area under the line of equality and is calculated by the sum of all paired absolute differences between unit members, divided by $(2 * \text{mean} * n^2)$. Both formulae are included in Figure 25.

To sum up, the discussion of Harrison and Klein's (2007) taxonomy has shown how crucial the distinction between separation, variety, and disparity is. These forms differ with regard to their (geometrical) shape, underlying theoretical assumptions, hypothesized causes and effects, and methodological prerequisites and approaches for measurement (Harrison & Klein, 2007). The required scale levels for measurement vary from categorical scale (variety) to interval scale (separation), and ratio scale (disparity). Different scale levels require different formulae to measure indices of diversity. Furthermore, different minimum and maximum values of diversity are associated with the use of different diversity indices. The most important consequence is that research designs for empirical investigation of diversity need to be precise about the form of diversity they address, the affiliated theoretical assumptions, and the methodological appropriateness of their empirical equipment.

4.5 Summary and implications for the present research

Diversity research has increasingly gained importance in the recent years due to several factors that include globalization, legal requirements and a socio-demographic change. In the course of research, diversity has shaped up as complex, dynamic and multidimensional. Several theoretical foundations have been described that have been used to explain which influence diversity can have at different levels - from individuals, over groups and organizations. These theories predict very different effects, some of which are very beneficial (creativity, range of perspectives, quality of decisions) and others very harmful (dissatisfaction, conflict, stress, lower communication, higher turnover). The theoretical reasoning and empirical observations therefore underline that diversity needs to be effectively managed to facilitate positive organizational outcomes.

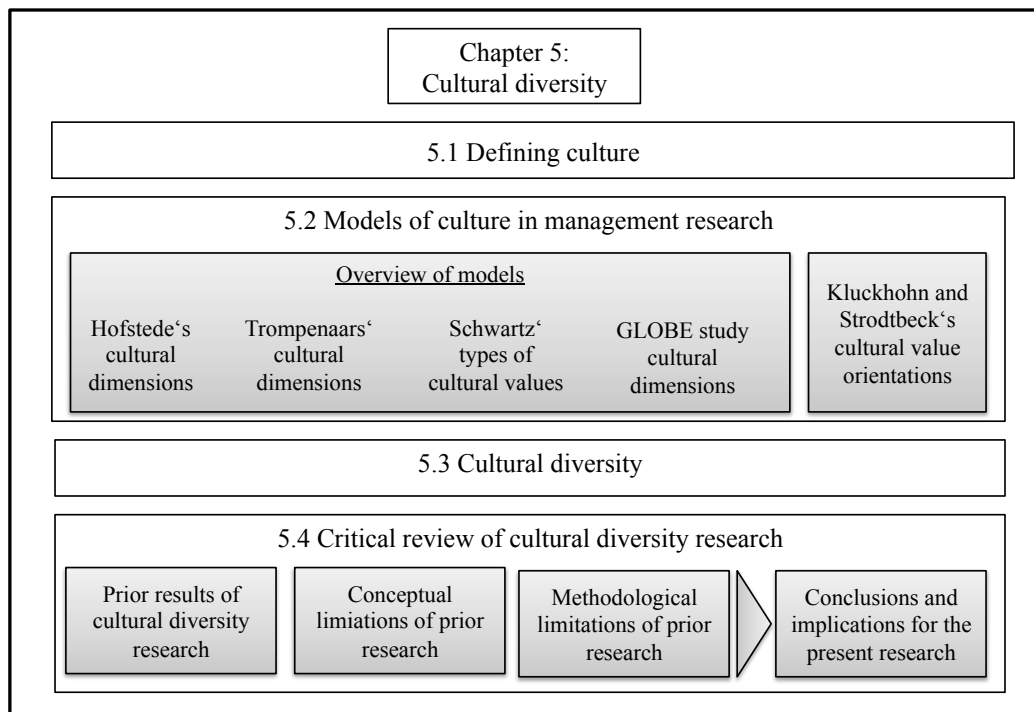
Diversity has largely been studied in a U.S. context with single attributes of diversity (Shore et al., 2009). More recently, diversity constellations that include multiple dimensions of diversity have been introduced within the faultline theory. Faultlines combine multiple diversity characteristics (e.g., age, gender, and race) as explanations why a group subdivides into subgroups. When combining different diversity characteristics, researchers need to be

aware that diversity has different forms of separation, variety and disparity. However, as each form has unique theoretical and methodological assumptions, combining diversity characteristics of one form (e.g., separation) with another form (e.g., variety) may cause methodological and interpretative problems due to their different theoretical assumptions, causes and effects, or scale levels. For that reason, this research proposes another path to diversity research and studies different forms of diversity (separation and variety) along one characteristic (cultural diversity). Cultural diversity will be introduced in more detail in the following chapter.

5. Cultural diversity

The present chapter aims at introducing culture as a diversity characteristic. Cultural differences have been suggested as a dominating source for conflicts between societies painting a grim future of cultural clashes between faultlines (Huntington, 1993). In contrast, Gene Roddenberry (n.d.) has been cited *"if man is to survive, he will have learned to take a delight in the essential differences between men and between cultures. He will learn that differences in ideas and attitudes are a delight, part of life's exciting variety, not something to fear"*. This chapter starts with definitions of culture and introduces an overview of various models of culture, which have found their way in organization and management research. Thereafter, Kluckhohn and Strodtbeck's cultural value orientations framework (1961) will be described in more detail since it is applied as the theoretical basis for the measurement of culture in the present research. The chapter then defines cultural diversity and critically reviews prior cultural diversity research. The following Figure 26 provides a graphical overview of the fifth chapter.

Figure 26: Contents and outline of the fifth chapter



5.1 Defining culture

Defining and conceptualizing culture is a difficult endeavour. In fact, researchers in cross-cultural management have complained that it is not possible to use the word “culture” without being obliged to give a range of definitions that contradict each other (Browaeys & Price, 2008). Culture has been studied in many disciplines under different names and with different definitions and conceptualizations (Taras et al., 2009).

Kroeber and Kluckhohn (1952) have analysed conceptualizations and definitions of culture and arrived at their definition of culture that is still largely cited in management research (Tsui et al., 2007). Their definition, as well as newer definitions of culture are presented in Table 3.

Table 3: Overview of definitions for culture

Author	Definition
(Kroeber & Kluckhohn, 1952)	Culture “consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiment in artefacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other, as conditioning elements of future action” (p. 118).
(Hofstede, 1980)	“Culture is defined as collective programming of the mind; it manifests itself not only in values, but in more superficial ways: in symbols, heroes, and rituals.” (p.1)
(DiStefano & Maznevski, 2003)	“Culture is a system of values, beliefs, assumptions and norms, shared among a group of people.” (p.1)
(House et al., 2004)	“...shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of collectives that are transmitted across generations.” (p.16)
(Adams & Markus, 2008)	“Culture consists of explicit and implicit patterns of historically derived and selected ideas and their embodiment in institutions, practices, and artifacts; cultural patterns may, on one hand, be considered as products of action, and on the other as conditioning elements of further action.” (p.341).
(Triandis, 2009)	“Culture is a shared meaning system found among those who speak a particular language dialect, during a specific historic period, in a definable geographic region.”

Although the definitions of culture vary, some communalities across various definitions seem to be established: First, culture emerges from interactions among people and with their environment (Adams & Markus, 2008). Triandis (2007) describes that people who interact with each other in social and physical environments need to reach agreements about how to behave together. Furthermore, the underlying assumption of Kluckhohn and Strodtbeck’s

(1961) framework is that the solution to common problems that societies face is related to cultural preferences. Societies need to find solutions to problems related to the human nature, for instance regarding how they organize a sufficient supply of food. Likewise, Trompenaars and Hampton-Turner (1998) state that cultures originate from how a group of people solves problems and reconciles dilemmas. In that view, culture is adaptive to the environmental context. People develop for instance language, skills, tools, ways of organizing information, patterns of behaviour, or systems of governance that are functional in adapting to and coping with their environment (Triandis, 2007). These aspects are internalized and become part of the human psychology – their mind is shaped (or “programmed”) by culture (Triandis, 2007) (see also definitions by Hofstede, 1991; House et al., 2004; Kluckhohn & Strodtbeck, 1961; Kroeber & Kluckhohn, 1952).

The second communality of conceptualizations of culture is that it is regarded as shared by members of a social group (see definitions by Gelfand et al., 2007; House et al., 2004; Triandis, 2009). Through their interaction in same contexts, people develop shared meanings, which spread through diffusion and acculturation. In this perspective, culture serves as a mental frame of reference shared by members of a social group that governs social cognition, i.e., the joint perception and interpretation of what happens in the environment (House et al., 2004; Trompenaars & Hampton-Turner, 1998). For instance, when people are culturally socialized in Western tradition they have a tendency to exhibit formal logic thinking rather than experimental knowledge, which is preferred by Asian socialized people (Nisbett et al., 2001). Consequently, culture – as introduced from an anthropological perspective – serves as a (double) boundary which people of one culture use as a reference for their identity and to delimitate them from people of other cultures (DiStefano & Maznevski, 2003; Triandis, 2007).

A third communality is that culture needs to be transmitted to other people to become a collectively shared reference. The transmission can occur from parents and grandparents to the next or following generations, among co-workers, or neighbours through a process of enculturation (Triandis, 2007). Triandis (2007) describes vertical (e.g., from parents to children), horizontal (among peers), or oblique (through social institutions as e.g., schools) transmissions. Besides the transmission through enculturation, culture can also be transmitted through acculturation when a person has direct contact with cultural influences outside the own cultural group (Berry, 1997).

A fourth communality across modern definitions of culture is its function to guide behaviour. Culture influences behaviour through the effect of shared perception (Nyambegera et al.,

2001; Ros et al., 1999). DiStefano and Maznevski (2003) reason that because culture provides scripts for behaviour, people know what to expect from each other and how to reciprocate. Thus, culture is needed for sound social interaction (Maznevski et al., 2002).

Finally, agreement exists that culture is a complex and multi-dimensional construct (Taras et al., 2009). The complexity can be graphically depicted by an onion diagram, where values constitute the core element (French, 2010; Taras et al., 2009; Vinken et al., 2004). For instance, Hofstede's (1980) model of different layers – although simplifying complex interrelations – depict values at the core of culture, as does the model of Schwartz (1999). Kluckhohn and Strodtbeck (1961) see values as implicitly or explicitly desired future states or conditions that influence and constrain possible courses of action. Also from an anthropological perspective, Schwartz (1994) defines values as desirable, trans-situational goals that vary in importance as guiding principles in people's lives. Because of their fundamental nature, values are considered as the most enduring and hardest to change element of culture from which other elements (e.g., rituals, symbols, artifacts, etc.) arise (Vinken et al., 2004).

Besides these commonalities across definitions and conceptualizations of culture, there exist multiple differences and disputes. The most prominent dispute is whether unique or comparable aspects of cultures are in the focus of research, labelled "emic" or "etic" in the terminology of cross-cultural research. The etic approach assumes that there is a set of universal cultural dimensions that are equally relevant to all cultures (Taras et al., 2009). It describes what is general in and across cultures, whereas emic refers to what is special in one or more cultures (Vinken et al., 2004). The emic approach assumes that at least some dimensions are culture-specific. Therefore, these dimensions cannot be used to analyse and compare cultures of different societies (Taras et al., 2009).

Hofstede (1980, p.24f) describes the underlying assumption of an etic approach that cultures "*are not so unique that any parallel with another culture is meaningless*". For some anthropologists and postmodernist researchers, the etic approach, however, is not thinkable as it aims at comparing incomparables (Vinken et al., 2004). Although an ideal research approach would combine emic and etic, as well as qualitative and quantitative approaches (Hofstede, 1980), no single model can comprise the highly complex, multidimensional and multi-layered phenomenon of culture (Taras et al., 2009). Therefore, while the choice of one approach does not mean to condemn the alternatives, researchers need to choose for practical reasons (Hofstede, 1980), and most researchers apply an etic approach (Taras et al., 2009).

The current research aims at analysing the cooperation in culturally diverse workgroups and therefore needs to rely on individual differences in specific cultural values between members

of workgroups. Hence, it needs to assume that there exist universal cultural value dimensions among all members of a workgroup and for which the individual and specific parameters of each team member can be compared to all other team members. Only in this way, an index for cultural value diversity can be obtained at the group-level. Therefore, the present research applies an etic approach.

Cultural models and measurements focus on different levels. Culture can be used to assess differences between nations, racial and ethnic populations within nations, organizations, or individuals (Taras et al., 2009). Most research has been conducted on a national- or society-level and considers culture as relatively stable (Taras et al., 2009). Without negating the stability at that level, this research adheres to McSweeney's (2009) view that culture at the individual-level is not stable nor coherent. Rather than assuming national uniformity, it is acknowledged that at the individual-level, cultural imprints are diverse, changeable, dynamic, and context-specific. Hence, while cultural values are considered as stable and shared at national- or society-level, a deduction to statements about individuals in specific situations is illegitimate. This research of team-level cultural value diversity is concerned with cultural differences between the individual members of a team. Therefore, it is considered as imperative to measure culture at the individual-level because of its dynamic and changeable nature at that level (McSweeney, 2009).

The perspective that culture is not stable or coherent at the individual-level is compatible with Oyserman and colleagues view (Chen et al., 2009b; Oyserman & Lee, 2007; Oyserman et al., 2002) of 'culture as situated cognition', also referred to as 'priming approach'. The underlying assumptions include that culture is dynamic, and individuals with multi-cultural backgrounds can simultaneously possess multiple cultural frames. These frames are adaptable and responsive to social cues (Chen et al., 2009b). Because of its situated character, culture is neither perfectly transmitted to all members of a cultural group nor is it perfectly uniform across all members of a culture (Oyserman & Lee, 2007). Hence, although being shared at the society-level, culture is not "fully in the head" of any particular member at any time (p.255). In this way, culture is conceptualized to capture the diversity of humanness (p.256). Based on a review of cross-cultural studies on individualism and collectivism (Oyserman et al., 2002), the priming approach suggests that cultures vary in the salience of value dimensions across various situations. In that view, individuals have (multiple) internalized cultural values (social scripts) that become salient as situated culture in social situations and thereby yield cognitive, affective and behavioural consequences (Oyserman & Lee, 2007).

The priming approach is considered as useful in the context of the current research for three reasons: First, it associates culture with influencing the content and nature of human thinking (Oyserman & Lee, 2007). Cultural differences are thus associated with differences in cognitive styles, contents, and interpretations. This fits to human cognition and information processing theories, and suggests that culture is a suitable diversity characteristic to be studied from these theoretical perspectives.

Second, because culture is considered as dynamic and incoherent, it supports the notion to measure cultural value orientations at the individual-level. Third, social cues are considered to influence the salience of cultural scripts and hence the salience of a rather individualistic or social self-concept. Here, the link to social categorization theory is obvious that highlights the role of situational cues for determining whether and which social or personal identity becomes salient. It can therefore be expected that situational cues not only directly influence the salience of a social identity, but also mediated through the priming of cultural values. Because research has repeatedly shown the strong identity-generating nature of culture (Gouveia et al., 2002), it can be regarded as a relevant diversity characteristic from a social categorization theory perspective.

5.2 Models of culture in management research

Multiple models of culture have been introduced to organizational and management research. Among these are the cultural dimensions by Hofstede (Hofstede, 1980; 1991) and by Trompenaars (1998), the cultural values concept by Schwartz (1994; 1999), and more recently, the GLOBE-study (House et al., 2004). These will be discussed in an overview. Thereafter, the second section of this chapter introduces the cultural value orientations by Kluckhohn and Strodtbeck (1961) in more detail, because they constitute the theoretical basis for measuring culture as a diversity characteristic.

5.2.1 Overview of cultural models

Among the different contributions to cross-cultural management, the work of Geert **Hofstede** (1980; 1991) is without doubt one of the most influential. Since then, an explosion of interest in the area of cultural management can be observed (Taras et al., 2009).

Hofstede (1980) developed his model empirically with a database of 72 countries and more than 116,000 questionnaires collected at IBM in 1968 and 1973. Based on this database, Hofstede (1980) developed his model of four cultural dimensions. The first two, power distance and uncertainty avoidance, were theoretically derived and found through an eclectic

analysis of data based on correlational analysis (p.41). Two further dimensions, individualism and masculinity, were derived from a country-level factor analysis. These four dimensions were then integrated in a country-level factor analysis. Later and in cooperation with Bond, Hofstede adopted a fifth dimension from Bond's Chinese Value Survey project – named “Confucian work dynamism” and renamed to “long-term orientation” (p.71). These five dimensions are introduced in Table 4.

Table 4: Hofstede's cultural dimensions (adapted from French, 2010; Hofstede, 1980; Oyserman et al., 2002; Vinken et al., 2004)

Cultural Dimension	Description
Power distance	Power distance is related to the basic problem of human inequality. It describes to which extent the less powerful members within a country expect and accept that power is unequally distributed.
Uncertainty avoidance	Uncertainty avoidance is related to the level of stress within a society in the face of an uncertain future. It describes the extent to which members of a culture are threatened by uncertain, unstructured or unknown situations.
Individualism / Collectivism (I/C)	Individualism is usually conceptualized in contrast to collectivism as a focus on rights above duties, a concern for oneself or the immediate family, and an emphasis on personal autonomy and self-fulfilment. Individualism is furthermore associated with basing the identity on one's personal accomplishments. In contrast, collectivist societies integrate people in strong cohesive groups that bind and mutually obligate individuals. Often, collectivism is associated with the desire to maintain group harmony. The I/C dimension relates to the integration of individuals into primary groups.
Maculinity / Femininity	Masculinity is contrasted versus femininity describing the extent to which emotional and gender roles are distinct. Masculine societies strongly differentiate between gender roles, where men are supposed to be tough, competitive, materialist and assertive, whereas women should be caring, tender and family- and life-oriented. Feminist societies have overlapping gender roles where both men and women are supposed to be modest, tender, and family- and life-oriented.
Long-term orientation	Long-term orientation is contrasted against short-term orientation describing whether people focus their efforts on the future or the present, particularly regarding the acceptance of delayed gratification of their needs. Long-term oriented cultures are future-oriented and highlight perseverance and thrift. In contrast, short-term oriented cultures foster the importance of the past and the present particularly by respecting traditions, preserving the “face” and fulfilling social obligations.

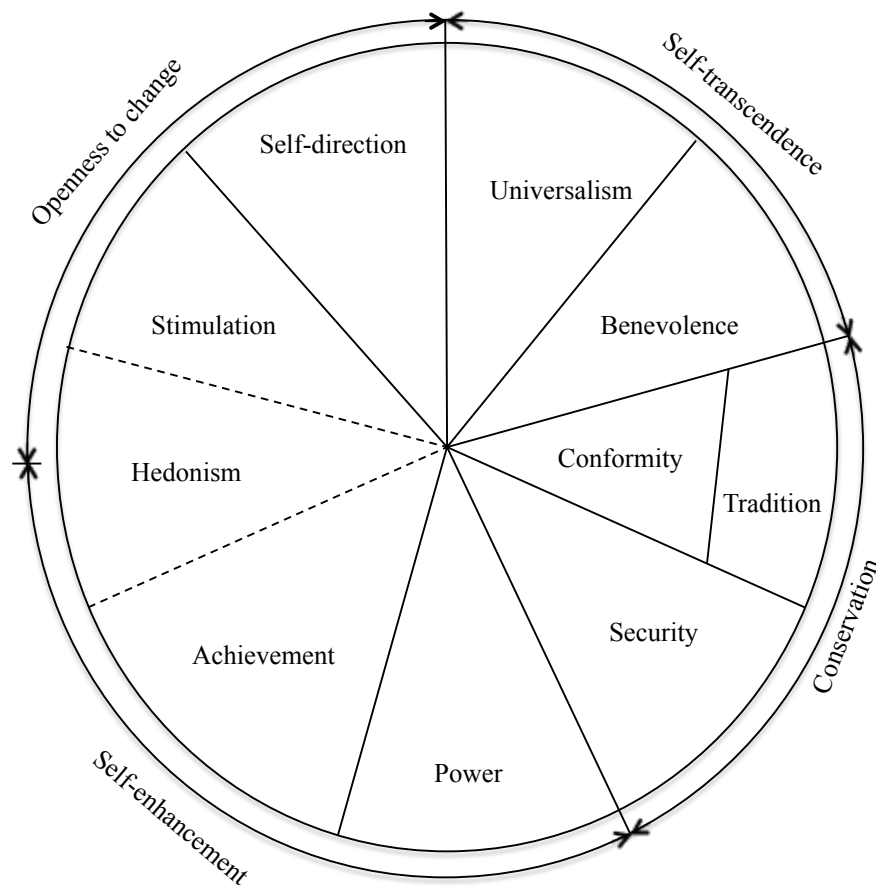
After Hofstede's study, several alternative models of culture and related measurement instruments gained recognition and popularity (Taras et al., 2009). These include work by Trompenaars (1998), Schwartz (1999), and the GLOBE team (House et al., 2004).

Trompenaar's (1998) model builds on data collected at his cross-cultural trainings and from additional 30 globally-operating companies. The entire database exceeds 30,000 participants, mostly from management positions. From this data, his model identified seven dimensions that fall into three categories of relationships to other people, passage of time, and relationship towards the environment (p.8).

The category of relationship to other people includes dimensions of universalism versus particularism (p.32), individualism versus communitarianism (p.52), neutral versus emotional (p.70), specific versus diffuse (p.83), and achievement versus ascription of status in societies (p.105). The dimension with relation to time differentiates between sequential and synchronic cultures. The last dimension of Trompenaar's model is the relation to nature (p.145) differentiating between controlling nature versus letting nature take its course.

Schwartz (1994; 1999) derived his model of cultural values from an empirical study among student and teacher samples in 40 countries (Vinken et al., 2004). His work starts with identifying 10 (later 11) distinct types of values that are considered as universal across cultures. In later research, Schwartz and colleagues (Ros et al., 1999) develop a theory that puts these value types into relation where competing value types emanate in opposing directions from the centre of a circle, and compatible value types are proximate to each other. Across this circle, they draw two dimensions of openness to change versus conservation and self-enhancement versus self-transcendence. These dimensions are considered as higher-order culture-level value types and were empirically supported in several studies. They are visualized in Figure 27. In further studies, Schwartz and colleagues (Ros et al., 1999) identified seven of these higher-order value types (Vinken et al., 2004) based on a smallest space analysis. These dimensions include conservatism, intellectual and affective autonomy, hierarchy, mastery, egalitarian commitment, and harmony (Vinken et al., 2004).

Figure 27: Cultural values and higher-order value types (Ros et al., 1999, p.53)



GLOBE was a large international research programme that analysed the relationship between national (or society-level) culture, organizational culture and leadership within organizations. GLOBE involved 62 countries and identified nine cultural dimensions from 735 items (House et al., 2004). Six of the nine dimensions have their origins in Hofstede's work (uncertainty avoidance, power distance, collectivism I&II, gender egalitarianism, and assertiveness), two further in Kluckhohn and Strodtbeck's (1961) framework (future orientation and humane orientation) and the remaining (performance orientation) from McClelland's (1961) work on need for achievement (House et al., 2004).

Based on empirical evidence, GLOBE identified six major global leadership practices and 10 country clusters (House et al., 2004). Furthermore, GLOBE discerns between cultural practices and cultural values. The former relate to participants' views on actual situations whereas the latter asked for how they should ideally be.

These renowned models of culture have established a well validated and multifaceted picture of the complex and multidimensional concept of culture. The various cultural dimensions, which have been developed and identified, can serve as valuable tools to discern cultural groups. In a globalized business world, understanding and managing cultural differences is

necessary (Gelfand et al., 2007). The cultural dimensions introduced here and much other cross-cultural research have produced insights about the cultural contingencies of models, theories and practices in management science. What seemed to be universal phenomena was found to be dependent on cultural contexts (Gelfand et al., 2007). At the same time, it provided people with knowledge how to behave in increasingly cross-cultural contexts.

On the other hand, the models introduced here have also been strongly criticised. Hofstede's work, for instance, has been criticised by McSweeney (2002) for being essentially based on five assumptions that are flawed. A first criticism refers to disregarding organizational and occupational cultures' effects (p.99), a criticism that has been cured in the GLOBE study by differentiating between society-level and organizational-level dimensions (House et al., 2004). Furthermore, McSweeney (2002) criticised the construction of Hofstede's scales as well as their external validity, because it is questionable whether the population of IBM employees is representative for the entire nation they stem from. The same criticism can be addressed to Trompenaars's and Schwartz's models, because Trompenaars recruited his sample from managers of international or multinational corporations that have been trained by his firm (Trompenaars & Hampton-Turner, 1998), while Schwartz relied on an international sample of students and teachers for his research (Schwartz, 1999). This limitation was only partially overcome by GLOBE with their sample of 17,000 middle managers from three industries (House et al., 2004). Still, middle managers stem from a specific social class that may not be representative for the broader national culture.

Furthermore, many of these studies disregard the effect of subcultures and intra-national differences because they focus on national homogeneity (Tung, 2008). House et al. (2004) acknowledge this limitation that national borders may not be an adequate cultural boundary. Furthermore, they state that country samples need to be relatively homogeneous to make valid comparisons to other countries. In large multicultural countries (e.g., India) it is – however – very difficult to obtain adequate samples that represent the intra-national cultural diversity.

As outlined above, the current research adheres to McSweeney's (2009) view of culture as stable at the society-level, but dynamic and incoherent at the individual-level. The described models in the field of cultural studies necessarily focus on higher-level (society or organization) cultural value dimensions. In their review of 121 cultural survey instrument, Taras et al. (2009) found that researchers usually collect data with self-reporting questionnaires at the individual-level. These are traditionally aggregated to the society- or group-level by deriving group averages. In the same way, Schwartz's (1994; 1999) cultural values were assessed as individual values, their universality however is studied at the

society-level. Consequently, Schwartz repeatedly cautions not to use them to study individual differences which would require a different theory (Ros et al., 1999; Schwartz, 1999).

Furthermore, research has shown that the factor structure at the society-level is not necessarily equal to that at the individual-level (Taras et al., 2009). For instance, an individual-level factor analysis failed to support Hofstede's five subscales (Spector et al., 2001).

Since the current research analyses differences between cultural values of individual team members, it requires a cultural survey instrument that is designed to study cultural values at the individual-level (Sivakumar & Nakata, 2003). This requirement disqualifies all models introduced in this section. One research instrument at the individual-level has been developed by Maznevski et al. (2002) and is based on Kluckhohn and Strodtbeck's (1961) value orientation framework. For that reason, the value orientations framework will be introduced in more detail in the next subsection.

5.2.2 Kluckhohn and Strodtbeck's (1961) cultural value orientations

Kluckhohn and Strodtbeck (1961) value orientations framework is based on over ten years of rigorous content analyses of field studies from around the world (Maznevski et al., 2002) and empirical work collected at the Rimrock area in the South-West of the USA (Kluckhohn & Strodtbeck, 1961).

The basic assumption of this framework is a "*systematic variation in the realm of cultural phenomena*" (Kluckhohn & Strodtbeck, 1961, p.3). The systematic variations are value orientations and defined as

"complex but definitely patterned principles resulting from the transactional interplay of three analytically distinguishable elements of the evaluative process – the cognitive, the affective, and the directive elements – which give order and direction to the ever-flowing stream of human acts and thoughts as these relate to the solution of "common human" problems" (Kluckhohn & Strodtbeck, 1961, p.4).

The theory assumes that there are a limited amount of common problems that societies face and which are related to human nature. Since there is only a limited scope of possible solutions to these problems, the variability in how the problems are solved is not coincidental but systematic. Variations in the value orientations relate to differences in which solution is preferred (Kluckhohn & Strodtbeck, 1961).

The value orientation framework covers five issues that need to be addressed by every social group in order to function effectively (Kluckhohn & Strodtbeck, 1961). These are (1) what is the character of innate human nature [human nature orientation]; (2) what is the relation of man to nature (and supernature) [man-nature orientation], (3) what is the temporal focus of human life [time orientation], (4) what is the modality of human activity [activity orientation], and (5) what is the modality of man's relationship to other men [relational orientation]. These dimensions are systematized in Figure 28 and will be introduced below.

Figure 28: Kluckhohn and Strodtbeck's value orientations (Kluckhohn & Strodtbeck, 1961; Maznevski et al., 2002)

Orientation	Range of variations					
Human nature	Evil		Neutral	Mixture of Good-and-Evil	Good	
	changeable	unchangeable	changeable	unchangeable	changeable	unchangeable
Man-nature	Subjugation		Harmony		Mastery	
Time	Past		Present		Future	
Activity	Being		Thinking		Doing	
Relational	Individual		Collective		Hierarchical	

Human nature orientation. Societies differ in how the human nature is predominantly perceived. Kluckhohn and Strodtbeck (1961) differentiate between two dimensions of human nature orientation: First, whether human nature is considered as good, evil, neutral, or a mixture of good and evil. The second subprinciple differentiates between mutable and immutable, describing whether the human nature can alter or not. Combined, Kluckhohn and Strodtbeck's (1961) framework includes six different classifications of how human nature is predominantly perceived by members of a social group.

For instance, societies that perceive human nature as good treat other people with trust and openness until they prove otherwise. Acts that harm others are seen as anomalies and caused by the situation, thus not inherent in the person. On the other hand, if human nature is perceived as evil, people are treated as not trustworthy until proven otherwise (Maznevski & Peterson, 1997). Maznevski and Peterson (1997) suggest that in work situations, human nature orientation relates to trust and performance monitoring. Team members that perceive human nature as generally evil will closely monitor their teammates to keep them from possible harmful acts.

Man-nature orientation. Possible categories of man-nature orientations cover subjugation to, harmony with, and mastery over nature (Kluckhohn & Strodtbeck, 1961). Cultural groups

that orientate towards subjugation accept their fate that is dictated by nature or by another supernatural force (Kluckhohn & Strodtbeck, 1961). From a subjugation perspective, everyone in the society needs to find a place within and cope with the “overall plan” (Maznevski & Peterson, 1997, p.67). If the predominant perception of man-nature orientation is harmony, then people don’t separate man, nature, and supernature but consider them to be united (Kluckhohn & Strodtbeck, 1961) – each is an extension of the others and needs to be balanced (Gudykunst & Ting-Toomey, 1988). Mastery-oriented cultures control natural forces and try to overcome them. They try to dominate nature and use it for humans’ needs, e.g. by regulating rivers (Kluckhohn & Strodtbeck, 1961).

Maznevski and Peterson (1997) suggest that man-nature orientations link to team processes. Members from mastery-oriented cultures are expected to emphasize control of processes and situations, trying to actively intervene and resolve a (problematic) situation. Members from harmony-oriented cultures set value on balance of forces, contributions, and processes. Subjugation-oriented cultures rather hesitate and beware of wasting resources in unchangeable situations, as well as identify fixed constraints of possible actions.

Time orientation differentiates between categories of past-, present- and future-orientation. Past-oriented groups emphasize traditions and worship ancestors. The dominant role of the past lies in its function to make sense of and as a guide to present events (Kluckhohn & Strodtbeck, 1961). Present-oriented cultures are concerned with the immediate situation and perhaps the close future, paying little attention to past events and considering the future as vague and unpredictable (Kluckhohn & Strodtbeck, 1961). Planning for the future and hoping that the future will be better than the present or past is not common in these cultures (Kluckhohn & Strodtbeck, 1961). The third category, future-oriented cultures focus on a bigger and better future and sacrifice the present for possible future benefits. These cultures value change (Kluckhohn & Strodtbeck, 1961), and consider long-distance implications of current actions (Maznevski & Peterson, 1997). Hence, this value orientation has some similarities with Hofstede’s (1980) dimension of long-term orientation.

Maznevski and Peterson (1997) suggest that time orientation has implications for priorities in tasks and problem-solving procedures. Furthermore, they suggest that time orientation relates to cognitive processes and information sources. In solving problems, past-oriented team members may rely on prior traditions, procedures, and records that have helped in the past, while present-oriented members rather focus on current data. Future-oriented are expected to rely on forecasts as main sources of information.

Activity orientation. The fourth value orientation allows variations between being, being-in-becoming, and doing. The second category, however, was renamed by Maznevski et al.

(2002) to thinking, because the “being-in-becoming”-orientation covers predominantly cognitive processes of reasoning, as well as emotional, intellectual, or sensuous experiences (Kluckhohn & Strodtbeck, 1961). Furthermore, the new nomenclature was found to be more consistent with other cross-cultural research (Maznevski et al., 2002). In thinking-oriented cultures people carefully and rationally approach activities and analyse any possible implications in detail (Maznevski & Peterson, 1997). Doing-oriented cultures focus on achieving specific goals and accomplishments, as well as “*getting things done*” (Kluckhohn & Strodtbeck, 1961, p.17). In being-oriented cultures people value work less than living and tend to accomplish tasks when they feel like. Activity is rather seen as a spontaneous expression of impulses and desires (Kluckhohn & Strodtbeck, 1961).

Maznevski and Peterson (1997) see implications for different problem-solving approaches across cultures. Team members from doing-oriented cultures tend to react immediately to problems, whereas both other categories rather postpone their reactions. Thinking-oriented members require more time to fully evaluate information, and being-oriented members may not understand the need for an immediate response. Furthermore, this value orientation is considered to affect the choice of information sources. Doing-oriented cultures rather consult immediate and close sources to provide a satisfactory level of information for immediate action, whereas being-oriented persons are expected to rely on sources they deeply trust and feel comfortable with. Thinking-oriented persons will engage in extensive research for rational sources, taking long time for interpreting information (Maznevski & Peterson, 1997).

Relational orientation covers how people relate to fellow humans. Kluckhohn and Strodtbeck (1961) introduce possible categories of lineal, collateral, and individualistic orientations. Maznevski et al. (2002) suggested renaming these categories in line with since established concepts in cross-cultural research into “individualistic, collectivistic and hierarchical” orientations.

Individualism is related to responsibility for oneself, on the autonomy of the individual, and on the primacy of individual goals over group goals (Kluckhohn & Strodtbeck, 1961). In individualistic societies, members assume responsibility for themselves and may leave a firm and co-workers behind if they get a better position elsewhere (Kluckhohn & Strodtbeck, 1961). Collectivistic societies care for a larger group and bear a responsibility for other people. People define their identity as a part of a larger social group, and see themselves as representatives of that group (Kluckhohn & Strodtbeck, 1961). In hierarchical societies, people are separated vertically, with a continuous and ordered positional succession (Kluckhohn & Strodtbeck, 1961). People higher in the hierarchy bear responsibility for those below them while the latter must obey to the upper (Maznevski & Peterson, 1997).

Regarding the relational orientation, Maznevski and Peterson (1997) see possible implications for group processes, mainly for communication and conflict. They propose that in hierarchical societies, people of low rank tend to accept the opinion of higher ranked team members and will refrain from contributing own ideas. In hierarchical cultures, high ranked team members will tend to control the group and enforce their opinion. People from individualistic cultures tend to pursue strategies to get their ideas enforced. These persons rather follow an own agenda. Similar to the lower-order hierarchical-oriented members, collectivistic members tend to withhold information or opinions that contradict other members. In that perspective, the relational orientation is suggested to relate to status and power. Contradicting someone from a hierarchical or collectivist culture may therefore offend team members and bear the potential for high conflicts within a team.

Kluckhohn and Strodtbeck (1961) point out that the selected dimensions are neither exhaustive nor the most important for human groups. Furthermore, they acknowledge that the range of solutions their model offers to the common problems of societies represents only a “*tentative formulation*” (p.19). Combined with the insights from newer cross-cultural research above (e.g., Hofstede or GLOBE), it becomes obvious that Kluckhohn and Strodtbeck’s five dimensions only cover a specific part of the large and complex concept of culture. Furthermore, since their concept is an early approach to assess cultural dimensions, some cultural value orientations and variations are not precisely defined (Hills, 2002). Furthermore, a drawback of their model is that it deals with values, which are in contrast to attitudes rather general than specific, and can therefore not be used to predict specific behaviours across situation (Hills, 2002).

Another limitation of the concept for applications in management research is that it has been developed from an anthropological perspective, whereas other cultural models have been developed in the context of cross-cultural management literature (GLOBE) or within firms (Hofstede). Further caution when applying this concept must be given because of the sampling of their study. The authors (1961) point to the fact that their sample consists of five communities in the South-West of the USA, and of 106 persons. The samples within the five cultural groups therefore comprised only between twenty and twenty-five adults, which is extremely low and insufficient to validate the model – although it has since been replicated by various other researchers (Hills, 2002). In contrast, GLOBE used 62 countries and approximately 17,000 managers to cross-culturally validate their model.

Despite these limitations, the value orientations have been extremely influential (Hills, 2002) and are considered as the “building-blocks” of contemporary models of cross-cultural

differences (French, 2010). One advantage for the present research is that Kluckhohn and Strodtbeck (1961) tested their framework for within-culture regularities and between-culture differences, hence at two levels. Within a culture, they tested in a first step the significance of the patterns that emerged when people of a culture rated the alternatives in a value orientation. This procedure tested the total items simultaneously at the value orientation level. For instance, individual respondents were asked to put individualism, collectivism and hierarchical orientation in a rank order. Second, Kluckhohn and Strodtbeck tested each alternative of a value orientation separately. This intra-item patterning allowed testing the relative popularity of each of the alternatives (item-level) within a cultural group. Thus, when they e.g. found that individualism and collectivism are preferred over hierarchical orientation, it allowed discerning whether there is a statistically significant difference in the rank-ordering between individualism and collectivism. In a third step, they tested the total orientation patterning, where the significance among the five value orientations is tested. It allowed identifying whether a cultural group can be described as having a dominant value orientation (e.g., is dominantly collectivistic) by identifying the general tendency towards consensus within a culture. Thereafter, in a fourth step, Kluckhohn and Strodtbeck tested for between-culture differences, in which the five cultural groups in their sample were differentiated and discerned according to their mean values along the value orientations. Based on these analyses, Kluckhohn and Strodtbeck (1961) found within-cultural and between-cultural differences in their sample. Hence, their model is suitable to be used for variations between individuals, because value-orientations are held by and differ between individuals (Kluckhohn & Strodtbeck, 1961). Individuals are clearly identified as holders of cultural value orientations, allowing to measure culture at the individual-level (Maznevski et al., 2002, p.278).

A further advantage of the framework is based on the conceptual independence of the value dimensions. It is not a bipolar decision on one scale between two poles (e.g., individualism and collectivism), but rather a rank-order of three conceptually distinct alternatives, in which two alternatives can also be similarly preferred over a third (e.g., hierarchical orientation is indifferent to collectivism, but both are preferred over individualism) (Kluckhohn & Strodtbeck, 1961). Maznevski et al. (2002) argue that the conceptual independence allows analysing culture in more depth, since the higher complexity allows a better understanding of cultural differences.

Another strength in the framework is that it covers cultural values and practices in societies, similar to what has been done by GLOBE (House et al., 2004). Hence, the value orientations

framework focuses on how individuals believe the world should work (cultural values) and their assumptions how the world works (practices).

Besides, the framework has been widely deployed in cross-cultural research (Groeschl & Doherty, 2000). The idea that cultures vary in the solution of universal problems and dilemmas has been adopted by Trompenaars (Trompenaars & Hampton-Turner, 1998) and Schwartz (Schwartz, 1999). Furthermore, two of Trompenaars's dimensions (relation to time and relation to nature) are derived from Kluckhohn and Strodtbeck's work. Similarly, GLOBE has included two dimensions from Kluckhohn and Strodtbeck (House et al., 2004). Concluding, the framework by Kluckhohn and Strodtbeck can be described as groundbreaking in the area of cross-cultural research (French, 2010).

5.3 Cultural diversity

This research focuses on culture as an attribute that constitutes objective and subjective differences between members of a team. Building on the above-cited definitions of diversity, this research understands cultural diversity as a compositional variable describing the distribution (separation, variety, and disparity; c.f. Harrison & Klein, 2007) of similarities and differences in cultural values between members of a workgroup. Cultural diversity in workgroups can emerge from composing a team with people from different nations or societies, but also from composing a team of same nationality members because of intra-national cultural differences (Tung, 2008). From that cultural perspective and in combination with social categorization theory (see above), cultural diversity is determined by dyadic and group-level interactions in which situational cues determine the salience of specific cultural frames that are either perceived as similar (in-group) or different (out-group) when team members interact.

Many researchers have highlighted the importance of cultural diversity in organizational and workplace environments. For instance, Devine et al. (2007) states that labour shortages, economic migrations, and humanitarian immigrations are driving forces of a multicultural workforce. Cox (1993) points to demographic change, immigration, and increasing labour-force participation of traditionally underrepresented groups that foster cultural diversity. More recently, Greve et al. (2009) find that firm-level geographical expansion results in culturally diverse top management teams. As the review above on newer forms of teamwork has shown, global, geographically dispersed, and virtual teamwork also fosters the occurrence of cultural diversity in organizations. Already in 2001, McDonough et al. (2001) found that 14 % of the firms in their sample firms have used culturally diverse teams for

innovative activities. They highlight that companies need to prepare team members to working in teams whose members speak different languages and come from a variety of cultures.

Culture as a diversity characteristic is important due to its strong identity generating nature (Gouveia et al., 2002). Cultural researchers widely agree that culture serves as a boundary that people use as a reference for their identity (DiStefano & Maznevski, 2003; Triandis, 2007). From a discourse research perspective, national culture as a diversity characteristic has been established by Barinaga (2007) who found that national culture is a resource that team member draw upon for social categorizations. Furthermore, she found that cultural differences were socially enacted.

Despite the prominent role, the paucity of research on cultural diversity has frequently been criticised. Due to an emphasis on demographic and surface-level diversity in research (van Emmerik & Brenninkmeijer, 2009), surprisingly little is known about the effects of the deep-level attribute of cultural diversity in teams. In their recent review about the state of knowledge on diversity in organizations, Shore et al. (2009) found that cultural diversity has only been studied in very few empirical studies, and almost all of these studies have simplified the measurement of culture. Likewise, Hinds et al. (2011) come to the conclusion in their review article that culture has been largely ignored in global team research.

In a similar vain but from a cross-cultural research perspective, Chen at al. (2009b) call for research at the team-level to study how cultural values within multicultural groups influence group effectiveness. The next subsection critically reviews empirical work on cultural diversity in teams.

5.4 Critical review of prior research on cultural diversity in teams¹

In 2007, Connaughton and Shuffler (2007) identified 25 articles dealing with multicultural teams, of which only 8 involved quantitative, and 12 qualitative empirical work. To systematically review prior work on cultural diversity, a search in the “Web of Science” database has been conducted using and combining the keywords *diversity* or *heterogeneity* with *culture* or *cultural* and with *workgroup*, *group* or *team*. Initially, this search produced over 5,000 entries of which over 1,100 stem from the research field of microbiology. Results were then narrowed down by research fields (management, social psychology, business, applied psychology, and economics) to 369 papers of which 339 were original research

¹ As required by DCU academic regulations for postgraduate degrees, it is indicated that parts of this section have been published in a paper at the IHRM Conference 2010 (cited as Kramer et al., 2010).

papers. After eliminating papers that only indirectly dealt with cultural diversity or studied cultural diversity at a different levels (firm-level or individual-level research), 29 group-level papers were identified (see Appendix 1). From these 29 studies, 10 studies conducted qualitative, largely case study-based research. One study (Daim et al., 2012) applied a mathematical model, and the remaining 18 studies used quantitative research approaches. From these 18 quantitative studies, 8 used student samples for their analyses.

For reviewing prior empirical work on cultural diversity, three aspects are of particular importance. First, mainly for identifying research deficits and developing hypotheses, prior empirical findings from diversity research are reviewed. Second, the conceptualization and measurement of culture as a diversity characteristic is of particular interest, because it was discussed above that culture is a complex and multi-dimensional construct. The second aspect is the conceptualization of diversity and how different degrees and forms of diversity have been measured. This also relates to the complex nature of diversity in research.

5.4.1 Empirical results from prior cultural diversity research

While this section primarily reviews evidence from prior research on cultural diversity, this section also includes research on national, ethnic or racial diversity, mainly because these attributes have been used by researchers as proxys to operationalize culture.

Results of previous cultural diversity research on team process variables are mixed, although a majority of research has reported negative effects. Some of the few positive results were reported by Cox et al. (1991) that because of higher representation of collectivist cultures in ethnically diverse groups, they show more cooperative behaviour than highly individualist all-anglo American teams. Others have found positive and negative effects on group processes in their research. For instance, Paletz et al. (2004) report that teams primarily composed of ethnic minorities resulted in more positive emotions and fewer negative ones. Hence, members in diverse teams from ethnic minorities are more likely to enjoy working together. However, diversity in a majority-dominated, as well as in a homogeneous team composition yielded more negative and fewer positive emotions.

Largely negative effects on group processes were reported for psychological attachment to the group (Tsui et al., 1992), team orientation (Watson et al., 2005), commitment to the group (Jehn et al., 1999), satisfaction and cohesion (Staples & Zhao, 2006), and cooperation (Daim et al., 2012). Furthermore, cultural diversity seems to be related to the emergence of different types of conflict. Jehn et al. (1999) found effects of value diversity on task, relationship, and process conflict. Pelled et al. (1999a) and Schweiger et al. (2003) found an

increase of emotional conflict in (racially) diverse groups that may foster interpersonal dislike and distrust. Likewise, case studies by Kankanhalli et al. (2007), Bouncken and Winkler (2010) and Barrett and Oborn (2010) reported increased task and relationship conflicts in diverse groups. The salient cross-cultural differences and conflicts can furthermore lead to negative emotions within the team (Barrett & Oborn, 2010).

Punnett and Clemens (1999) found that diverse teams take longer to make decisions. Besides possible effects from conflict on the ability to reach a consensus, this may be due to increased complexity of communication as found by Maznevski and Chudoba (2000), Schweiger et al. (2003), Shachaf (2008), and Daim et al. (2012). Overall, results from Thomas (1999), and Lunnan and Barth (2003) suggest that cultural diversity is associated with process losses.

Results on group outcomes are largely mixed and inconclusive. Some researchers (McLeod & Lobel, 1992; Punnett & Clemens, 1999) found positive results on creative performance (number and quality of ideas or alternatives generated) of diverse groups. Others found rather negative results on creative outputs at least in early phases of teamwork (Thomas, 1999; Watson et al., 1993), while some found no significant effects on workgroup creativity (Paletz et al., 2004).

With regard to other team effectiveness measures, results are also equivocal. Tyran and Gibson (2008) reported positive effects of collectivism diversity on group efficacy and reputation, and Crown (2007) of individualism and collectivism diversity moderated by group-centric goals. Elron (1997) found that cultural diversity increases perceived performance mediated by task conflict. The case studies from Lunnan and Barth (2003) suggest a higher potential to generate new knowledge. Hence, it seems that cultural diversity can increase team performance with regard to creative outputs and learning, when teams share a common goal, and when task conflict allows scrutinizing a problem from different perspectives.

On the other hand, several articles, e.g. by Jehn et al. (1999) reported negative effects on actual and perceived performance, and on group efficiency. Homogeneous teams perform better than culturally diverse (Thomas, 1999), at least over time (Watson et al., 1998). Similarly, the case study by Bouncken and Winkler (2010) suggests that cultural diversity may create strong faultlines within teams that impede innovativeness and performance.

Other studies found that the effect of cultural diversity depends on the degree of diversity. Low and high cultural diversity seem to positively affect group performance while moderate team diversity seems to be detrimental to productivity (Earley & Mosakowski, 2000). This curvilinear relationship was, however, not supported in firm-level research by Richard et al.

(2004). Only in interaction with firm-level innovativeness, a curvilinear relationship of racial diversity and productivity emerged. Some further studies (Pelled et al., 1999a; Staples & Zhao, 2006) found no significant direct effects of cultural diversity on team performance.

The discussion of cumulative findings of cultural diversity research leads to the conclusion that – similar to diversity research in general (Harrison & Klein, 2007) – findings are largely inconclusive and inconsistent. In fact, Stahl et al. (2009) found in their meta-analysis that the mean effect size for the impact of cultural diversity on performance is about zero. In combination with in-depth case study research, the inconclusive findings can be better interpreted. Vallaster (2005) found that at the beginning, cultural diversity relates to differences in awareness and knowledge of the group tasks and goals. Studying the cognitive, affective, and communicative dimensions, she found that positive affect encourages interaction and communication between team members and leads to developing a shared understanding. A shared understanding is pivotal for efficient social interaction processes, as it fosters cognitive processing and communication. However, communication can make cultural differences become salient, which leads to insecurities, frustration, and a lack of cooperation between members. Then, emerging negative emotions and conflict hamper the creation of trust and exchange of information. Therefore, strong leadership behaviour must leverage the differences between members.

DiStefano and Maznevski (2000) and Ely and Thomas (2001) found different types of culturally diverse teams. DiStefano and Maznevski (2000) differentiate between destroyers, equalizers, and creators that can be differentiated by how they manage their differences within the team and whether they create value for the firm. Ely and Thomas (2001) also differentiate three types with diversity perspectives apparent in teams. Only when cultural diversity is linked to work processes through redefining products, markets, and business practices, and when team members contribute their diverse and valuable resources to the workgroup (i.e., a learning and integration perspective on diversity), cultural diversity yields positive effects. Other perspectives (access and legitimacy, and discrimination and fairness) were found to be detrimental to cross-cultural learning and to integrating diverse skills.

Bouncken and Winkler (2010) identified in their case study that the form of cultural diversity causes different faultline strengths and conflict levels within teams. Highly diverse and homogeneous teams were found to have low cultural faultlines. Teams with majority and minority cultures, as well as bicultural teams appear to have high faultlines that provoke high levels of conflict. Conflict may be a source of learning and individual development, but in teams, where cultural values separate team members into two largely culturally homogeneous subgroups (with or without a dominant culture), the conflict leads to decreased

knowledge sharing (Barrett & Oborn, 2010), lower creativity and less innovativeness (Bouncken & Winkler, 2010).

To conclude, cultural diversity seems to involve a large potential for high performance especially when the task focuses on creativity, innovativeness and learning. This perspective seems to be supported by the meta-analysis by Stahl et al. (2009) who found a consistent direct effect for creativity. Unfortunately, this potential seems to be reduced by ineffective group processes, e.g. by higher conflicts and lower team integration. These effects, at least for task conflict, were also supported in the meta-analysis by Stahl et al. (2009). Furthermore, the curvilinear relationships, as well as the case studies that report different types of cultural diversity within teams suggest that constellations or forms of diversity have an influence on which effects prevail within a team. This is consistent with the taxonomy as suggested by Harrison and Klein (2007).

In order to further investigate the inconsistent and inconclusive results of prior cultural diversity research, the next sections analyse how culture and diversity have been conceptualized and measured in research.

5.4.2 Culture – conceptualization and operationalization

The conceptualization of culture determines how culture, as the object of similarities and differences between members of a workgroup, is operationalized and measured. The results are also included in Appendix 1. Large differences across studies are found with regard to which attributes have been used to operationalized culture. Researchers mostly used nationality or cultural dimensions for their analyses.

Nationality was used in eleven studies in the sample - either as a singular variable (e.g. Earley & Mosakowski, 2000), or in combination with other variables (e.g. with ethnicity c.f. Watson et al., 1993). The analysis of nationality as an attribute to measure cultural diversity is very difficult. Some studies (e.g., Watson et al., 1993; Earley & Mosakowski, 2000) use nationality as a proxy for culture in their research. Others scholars (e.g., Dahlin et al., 2005; Kearney et al., 2009), however, do not equalize national diversity and cultural diversity, but treat national diversity as a diversity type of its own kind. Hence, there exist strong differences across researchers in the operationalization of cultural and national diversity. Furthermore, it has been argued that national diversity provides more information about social categories than cultural diversity (Dahlin et al., 2005). This suggests that national diversity and cultural diversity are in fact different constructs. Yet, because many scholars treat national diversity and cultural diversity as synonymous, the review in this thesis also needs to include research on national diversity.

Cultural values were mostly assessed along the individualism / collectivism (I/C) dimension, as in studies by Thomas (1999), Staples and Zhao (2006), Hardin et al. (2007), Crown (2007), and Tyran and Gibson (2008). Other studies developed an own scale (Bouncken and Winkler, 2010), or relied upon the CPQ4 by Maznevski et al. (2002).

Race or ethnicity were also often used as further attributes for cultural diversity, e.g. in studies by Watson et al. (1993) or Tsui et al. (1992). Gender has never been used as sole indicator for cultural differences between members, but was included in four studies as an additional characteristic (Ely & Thomas, 2001; Pelled et al., 1999b; Richard et al., 2004; Tsui et al., 1992). Other attributes for cultural differences included religion, social class, sexual orientation, and language.

The variation of attributes, which have been used to operationalize culture as the attribute of similarity or differentness between members, may therefore be a reason for some of the inconsistencies across cultural diversity studies. In this direction, Stahl et al. (2009) found in their meta-analysis a moderating effect by the level of diversity (surface- vs. deep-level) on communication effectiveness. Hence, whether culture is conceptualized and operationalized as surface-level or deep-level explains some of the inconsistencies in results from cultural diversity research. A moderating effect from the conceptualization of culture could – however – not be found for conflict and social integration. The next subsection therefore analyses the (in-)consistencies in operationalizing and measuring diversity across studies.

5.4.3 Diversity – operationalization and measurement

Operationalizing and measuring diversity requires that researchers used a quantitative research approach, and therefore, only quantitative studies could be analysed. The results of the identified studies are presented in Appendix 2. Although with a quantitative approach, studies by Govindarajan and Gupta (2001), Hardin et al. (2007), Crown (2007), and Li (2010) needed to be excluded from the analysis, since they did not operationalize a compositional diversity variable in their research. For analytical purposes, the conceptualization of diversity was classified within the framework proposed by Harrison and Klein (2007). For instance, when negative effects from racial diversity on psychological attachment to the unit were hypothesized based on similarity-attraction and social categorization theories (Tsui et al., 1992), this conceptualization was classified as separation.

A majority of seven studies conceptualized with separation and variety two opposite forms of diversity in their theoretical argumentation. Hence, researchers typically hypothesized the

“double-edged sword” by expecting some positive (variety) and some negative outcomes (separation) from cultural diversity. Two studies (Jehn et al., 1999; Tsui et al., 1992) focused with separation solely on one particular form of cultural diversity. Only one study by Pelled and colleagues (1999b) explicitly conceptualized cultural diversity from a disparity perspective building upon social comparison theory. Two studies did not build upon a specific diversity perspective, but argued from cultural tendencies (Cox et al., 1991) and based on prior empirical work (Watson et al., 1998).

The alignment of conceptualization of diversity with expected, as well as empirically found results was very consistent. When studies expected or found negative effects from cultural diversity, they were typically hypothesized from or explained by similarity-attraction or social categorization theories. The variety perspective of cultural diversity was typically explained by a wider range of perspectives from underlying differences in cognitive structures by team members (Elron, 1997) and better decision-making in culturally diverse teams.

When it comes to the measurement of diversity, the consistency comes to an end. The review shows a wide range of different instruments used to assess degrees of diversity within the teams. Studies by Cox et al. (1991), Watson et al. (1993; 1998), Punnett and Clemens (1999), Earley and Mosakowski (2000), and Staples and Zhao (2006) did not measure degrees of diversity at all. They work with mixed designs of homogeneous and diverse teams. All teams with members that are heterogeneous with regard to the studied attribute(s) are referred to as diverse, and their results are compared to those of homogeneous teams. Pelled et al. (1999b) and Jehn et al. (1999) use the entropy-based index developed by Teachman (1980), while Kirkman and Shapiro (2005) and Tyran and Gibson (2008) apply the standard deviation. Furthermore, Tsui et al. (1992) and Thomas (1999) rely upon the Euclidean Distance – a measure which is prominent in the domain of relational demography. Moreover, Richard et al. (2004) used Blau’s (1977) inequality index, and Elron (1997) the coefficient of variation. Consequently, the variation in measuring diversity across the studies may also account for the part of the inconsistencies across cultural diversity studies. The next sections critically investigate which limitations were identified that inhibit knowledge advancement in cultural diversity research.

5.4.4 Conceptual limitations of cultural diversity research

The strong reliance on surface-level attributes as surrogates for culture is a first aspect that needs to be criticised. The majority of studies, for which the operationalization of culture

could be identified, use combinations of nationality, ethnicity or race, and gender for assessing cultural differences between team members. Although culture is defined as a largely latent construct with deeply held and implicit values (see definitions above and DiStefano & Maznevski, 2000), many researchers rely on readily observable attributes to operationalize culture. Many cultural models, however, agree that culture consists of different layers and that major parts operate unconsciously and subsurface (e.g., Schein, 2004; Hofstede, 1980). Hence, the latent and subsurface nature of culture is a strong argument for a deep-level conceptualization in diversity research.

Furthermore, apart from the question of whether it is legitimate at all to reduce culture to nationality, ethnicity, race or gender, it is a major methodological problem that all these surrogates for culture are nominally scaled, categorical variables. Working with categorical variables allows dichotomous classifications only: either two team members have a similar cultural background or not.

A vast body of literature on cross-cultural research suggests that culture is too complex and multidimensional (e.g., Taras et al., 2009; McSweeney, 2009) to be assessed by categorical variables of nationality, religion, or race, which rather cause confusions than capturing the complex whole of culture (Triandis, 2007).

Arguments against categorical variables include the disregard of subcultures and biculturalism, of cultural distances, and an implied reverse ecological fallacy. While other areas of cross-cultural research have moved beyond categorical variables, global team and cultural diversity research seem to still strongly rely upon these attributes to describe cultural differences between team members.

Since categorical variables assume a within-category similarity, sub-cultural differences, dynamics and context-specifics are ignored (McSweeney, 2009). Because of variations within countries and within ethnicities, categorical aspects as nationality or country only explain negligible parts of the variance of cultural dimensions (McSweeney, 2009). In contemporary societies, immigration and workforce mobility can lead to highly specific and complex cultural imprints of team members that blend elements of home and host country cultures dependent upon the type of acculturation (Berry, 1997). According to culture as “situated cognition” theory (Oyserman & Lee, 2007), people who have lived for longer periods of time in two cultures may develop “bicultural self-identities” and situational cues determine which culture becomes transiently salient. Such complex phenomena cannot be conceived by grasping culture as nationality, ethnicity, race or gender.

A further disadvantage of categorical variables is that they do not capture distances, which is essential for measuring cultural diversity. Triandis et al. (1994, p. 778) define cultural distance as the extent to which cultures include similar or different elements, both objectively and subjectively. Social categorization theory assumes that the perceptibility of differences and the comparative fit increase the salience of categories for self-identification (Turner, 1987; van Knippenberg et al., 2004). From these perspectives, cultural distance is assumed to prompt social categorization processes, because more culturally distant team members have more obvious differences between them, which increases the salience of culture for self-identification. Hence, cultural distance may increase difficulties, costs and risks of cross-cultural contacts due to more incompatible practices (Stahl & Voigt, 2008). Using categorical variables, however, systematically disregards the effects of cultural distances, and researchers are unable to identify a diversity difference between a team of German and Austrian members as compared to a team of German and Japanese members. It is evident, nonetheless, that cultural differences (objective and subjective), and hence the degree of diversity, vary.

In addition, the usage of categorical variables in cultural diversity research is problematic since it implies a reverse ecological fallacy, i.e. when country- or society-level characteristics are incorrectly applied to individuals (Van De Vijver & Leung, 1997). Such cross-level inferences are often fallacious because of difference in meaning of constructs at the individual- or society-level (Van De Vijver & Leung, 1997). Inferring from national, ethnic or gender affiliation to individuals represents a confusion of individual- and society-level statements, as it implies within-category uniformity (McSweeney, 2002). For instance, Elron (1997) ascribes country-level average values along Hofstede's cultural dimensions to individual team members, even though "*the 'average person' from a country does not exist*" (Hofstede, 1991, p. 253).

The problem of a reverse ecological fallacy, however, is not constrained to cultural diversity studies using categorical variables. Scholars have frequently used the I/C dimension to assess cultural differences between members, often with Hofstede's (1991) scales. These scales, and similarly most other cross-cultural research instruments as e.g. Schwartz' (1999) cultural values, their underlying dimensions, factor structures, and item wordings are validated at the society-level, but then applied at the individual level. This application, however, is illegitimate (Taras et al., 2009) and has been empirically proven as wrong (Spector et al., 2001).

Moreover, studies applying cultural value dimensions are also subject to criticism of approaching the complex and multidimensional phenomenon of culture with simplistic and

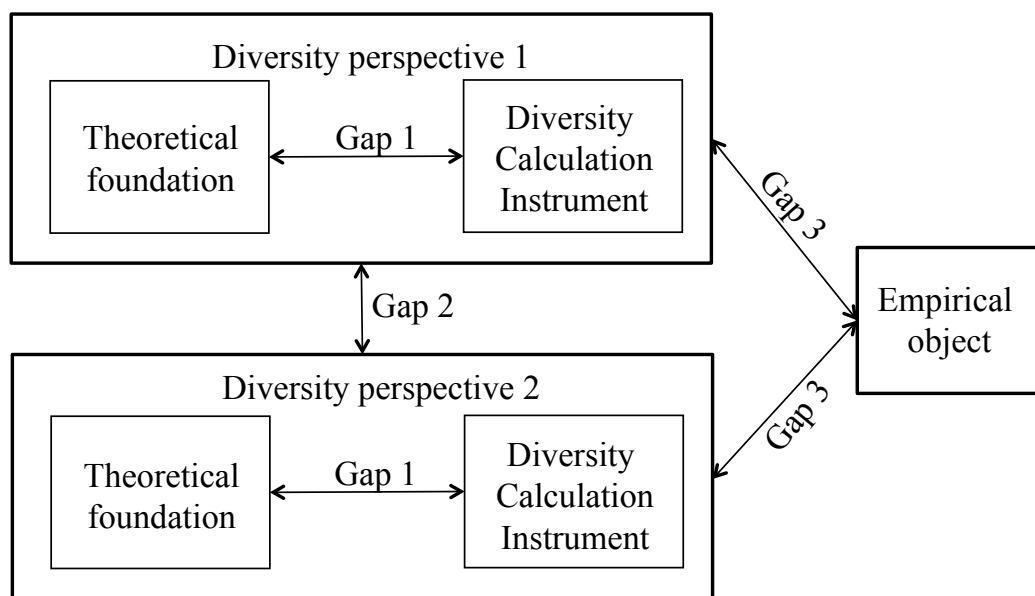
reductive measurements. The review has shown that only one study (Kirkman & Shapiro, 2005) uses multiple cultural dimensions to assess diversity among team members, while all other studies only operationalized a single dimension of culture. As criticised for the entire field of cross-cultural research (Chen et al., 2009b), cultural diversity research is in most cases limited by reducing culture to single dimensions that does not explain the entire and complex phenomenon.

5.4.5 Methodological limitations of prior cultural diversity research

Besides the conceptual limitations, many prior studies are also subject to further methodological limitations by using often insufficient and inappropriate methodological approaches to measure the degree of diversity.

First, it was established above that researchers have used a multitude of different measurements to assess degrees of diversity in their research. The variety of diversity indices raises the question whether and to what degree effects found in these studies are comparable. Furthermore, the problems that are inherent in these studies' methodological approaches can be captured in three issues (gaps). The first issue (GAP 1) refers to an improper combination of form of diversity (including theoretical foundation and necessary scale level) and diversity calculation formula. The second issue (GAP 2) concerns the neglect of alternative forms of diversity with regard to the attribute under study. Finally, the third issue (GAP 3) indicates an erroneous combination of form of diversity (including theoretical foundation, scale level, and calculation formula) and empirical object of analysis. These gaps are depicted in Figure 29 and will be described below.

Figure 29: Identified methodological limitations of diversity research



Gap 1. The first gap describes a mismatch of the form of cultural diversity and the calculation instrument applied. Not recognizing that diversity can take different forms, may lead researchers to operationalize one form of diversity (e.g. separation), but measure another (e.g. variety) (Harrison & Klein, 2007). For instance, Pelled et al. (1999a) conceptualize cultural diversity by race in terms of separation, but use Teachman's (1980) index to measure it. As outlined above, Teachman's index assesses variety, not separation. Elron (1997) applies the coefficient of variation to determine the degree of diversity along Hofstede's (1991) cultural dimensions. Yet, the coefficient of variation requires ratio scaled data sets with a naturally fixed zero-point (Bedeian & Mossholder, 2000). This applies for annual income in dollars or for team longevity, but not for Hofstede's dimensions. Thus, the scale level provided by the operationalization of culture does not suit the calculation method of the degree of diversity. Similarly, Tsui et al. (1992) apply the ED, a formula that requires interval scaled data sets for categorical-scaled data of gender and race. Such methodological friction, of course, questions the validity of the respective research conclusions (Harrison & Klein, 2007).

Gap 2. The second gap concerns the non-consideration of alternative, but possibly relevant forms of diversity in research designs. Many researchers distinguish dichotomously between homogeneity and diversity (see above). In doing so, they at least implicitly pick out one form of diversity - separation, variety, or disparity - and contrast its effects to the ones of homogeneous teams. Yet, diversity with regard to certain attributes may be conceptualized and analysed in different ways. Harrison and Klein (2007) outline that gender diversity may be looked at in forms of separation, variety, and disparity: Gender may reflect opposing beliefs (separation), qualitative different knowledge caches (variety), or result in power and payment differences between team members (disparity).

Kirkman and Shapiro (2005) operationalize and measure the degree of separation by using the SD. In doing so, their research neglects variety and disparity and their possible effects. Cox et al. (1991), Watson et al. (1993), Earley and Mosakowski (2000) and all other studies that apply categorical variables uncover variety but disregard separation brought about by distances. Other studies (e.g., Dahlin et al., 2005; Richard et al., 2004) theoretically conceptualize diversity as separation and variety, but operationalize and measure only one of them (variety). It seems that not one study in the field has yet conceptualized and measured cultural diversity in its different forms, simultaneously. Contrasting diverse and homogeneous teams, or using only one single diversity index ignores the complexity of diversity with its different forms. The different diversity forms with their underlying effects on team processes and effectiveness can emerge simultaneously in teams (van Knippenberg et al., 2004) and the potential from the variety (or "value in diversity"-) perspective may be

levelled out by negative effects from separation and disparity forms (Gebert, 2004). Hence, measuring a single form of diversity is insufficient to grasp these complex team diversity constellations within teams, in which one form of diversity (e.g., social categorization processes from a separation perspective) can interact with effects of another form.

Gap 3. The third gap reflects an inappropriate pairing of theoretical conceptualization, operationalization and measurement of cultural diversity on the one hand, and empirical objects on the other. The following Table 5 illustrates this argument by looking at four hypothetical teams (A to D) consisting of five members each.

Table 5: Illustrative example of differences between operationalization and empirical objects in diversity research

Group	Values					Mean	Median	SD	ED
	Member 1	Member 2	Member 3	Member 4	Member 5				
A	2.00	3.00	4.00	5.00	6.00	4.00	4.00	1.41	1.92
B	1.50	1.50	1.50	1.50	5.00	2.20	1.50	1.40	1.88
C	1.90	1.90	3.00	5.00	5.00	3.36	3.00	1.40	1.90
D	1.00	1.00	1.00	4.00	4.00	2.20	1.00	1.47	2.07

The teams in Table 5 simulate high variety (team A), high disparity (team B), and high separation (team D), as well as medium variety and medium separation (team C). Although median and mean values largely differ, and although we have very different diversity forms prevailing in that sample, the standard deviation and the Euclidean distance deliver rather similar results. Based upon the above-delineated theoretical differences between diversity forms (see Section 4.4.3), however, it must be assumed that effects on team performance should be different. In short, despite large differences in diversity constellations and theoretical assumptions, SD and ED are unable to reliably distinguish between forms of diversity.

Similarly, a low Blau (1977) index can be interpreted as a quasi homogeneous team constellation, but could also manifest either in high separation (two homogeneous subgroups) or in high disparity (minority and majority constellation). When scholars only measure one form of diversity, they can therefore not be certain about which form of diversity actually prevails within the team.

The review has shown that researchers typically assess one diversity index (e.g., the degree of separation by the SD) and test in subsequent statistical analyses how the varying degrees of that index affect process or outcome variables. Based on the insight that single diversity indices do not reliably distinguish whether diversity is brought about by separation, variety,

or disparity, it can be argued that the sample may contain teams other than the diversity form under investigation. In the theoretical example from Table 5, high variety (team A) may be mistaken for high separation (team D). Or, low variety from a small Blau index may reflect homogeneity in one team, but also high separation or disparity in other teams. In other words, when conceptualization and methodology are unable to reliably capture the empirical reality in the sample, the results may be blurred in that team outcomes due to one form are erroneously attributed to another. As a consequence, it implies that single diversity indices are only useful if the researcher knows from additional information which form of diversity actually prevails in a team.

5.4.6 Conclusions and implications for the present research

It is not intended to discount the individual contributions of prior studies on cultural diversity. However, as the review of results here and the meta-analysis from Stahl et al. (2009) have shown, from a cumulated perspective the results are inconsistent, blurred and deliver extremely low, insignificant effect sizes.

It could be established that strong differences exist in the conceptualization and measurement of culture and diversity across studies. One important conclusion is that although cross-cultural research has introduced more than a hundred instruments that quantitatively measure dimensions of culture (Taras et al., 2009), many studies in diversity research uses combinations of nationality, ethnicity, race, and gender as surrogates for capturing culture. These nominal-scaled categorical variables however entail conceptual limitations as they neglect cultural distances, sub-cultural differences, and the phenomenon of biculturalism. Furthermore, the research is subject to the problem of reverse-ecological fallacy. When empirical studies assessed deep-level cultural dimensions of team members, they often used only a single cultural dimension measured with scales, which were developed and validated at a different level and are not applicable to cultural diversity research.

Methodologically, three frictions between theoretical conceptualizations, diversity calculation instruments, and empirical facts have been described. Diversity is a complex construct embracing different forms, scale levels of data and calculation instruments. The conceptualization and operationalization of culture has consequences for calculating the degree of diversity in teams. The disadvantage of categorical surrogates for culture lies in their scale level that solely allows capturing the form of variety.

One implication is that researchers should move beyond single-level, one-dimensional and simplistic conceptualizations of culture by using multiple deep-level cultural value

dimensions. For this research implies that culture needs to be assessed with a research instrument that works at the individual-level. Since Kluckhohn and Strodtbeck's (1961) value orientation framework was designed to measure between-society and individual-level differences (see above), this theoretical framework is suitable to assess culture in the context of team-level cultural diversity. It is the only theoretical framework in the Cultural Survey Catalogue (Taras, 2007) that has been transferred into an internationally-validated and available research instrument to study individual-level cultural differences, developed by Maznevski et al. (2002) and called "Cultural Perspectives Questionnaire Version 4" (CPQ4). The CPQ4 comprises eleven variations of four cultural dimensions (relationships, environment, nature of human, and activity), therefore measures multiple individual cultural values instead of surrogates. Furthermore, it uses interval-scaled data sets (Likert-Scales) that allow accounting for cultural distances.

With regard to the methodological gaps, it implies that this research theoretically and empirically operationalizes the forms of cultural diversity as separation and variety at the same time. Using the CPQ4 to operationalize separation by the SD has been practiced by Kirkman and Shapiro (2005) before. Measuring variety with the CPQ4 requires down-scaling the interval scaled data into categories. The procedure will be described in the section on methodology of this thesis.

The diversity perspective of disparity needs to be excluded from quantitative analysis because cross-cultural research instruments, as the CPQ4, do not allow calculating a disparity index (coefficient of variation or GINI-Index), as both indices require ratio scaled data sets with naturally fixed zero-points (Bedeian & Mossholder, 2000). The simultaneous measurement of two or more forms of cultural diversity, in this thesis cultural separation and cultural variety, provides the additional information necessary to empirically differentiate between forms of diversity. Because nationality has often been used as a proxy for culture in diversity research, and since nationality has been conceptualized as a superordinate determinant of identity that provides more information about social categories and is considered to be more salient than culture or race (Dahlin et al., 2005; Earley & Mosakowski, 2000; Hambrick et al., 1998), national diversity will be included as a further diversity characteristic.

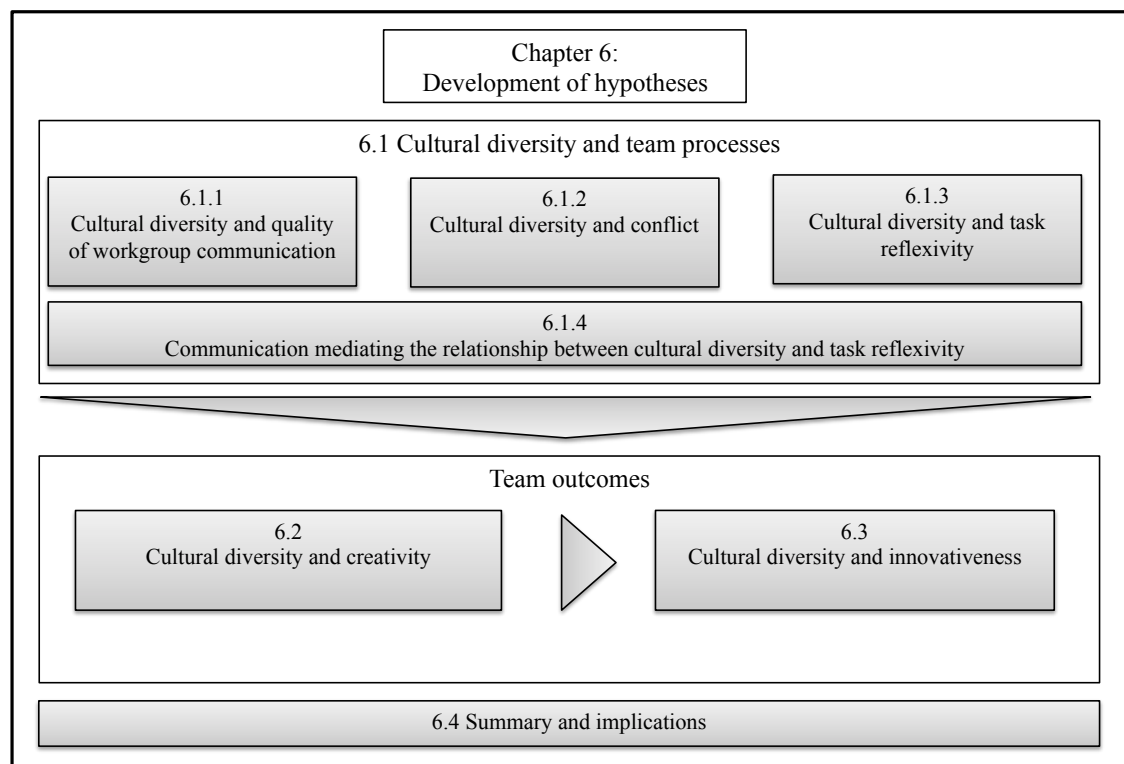
6. Development of hypotheses

In this chapter, theories presented in the previous chapters will be used with additional theoretical considerations to derive hypotheses for empirical testing. Researchers have repeatedly found that team processes mediate the relationship between workgroup diversity and performance (e.g., Jehn et al., 1999; O'Reilly et al., 1989). The first part of hypotheses (Chapter 6.1) deals with effects of cultural diversity on team processes. Thereafter, hypotheses will be developed that relate cultural diversity to team outcomes of creativity (Chapter 6.2) and innovativeness (Chapter 6.3). The theoretical models in these sections partly build on previous models and extend them with team outcomes.

Altogether, the derived models build upon a system theory approach as incorporated in the I-P-O model (McGrath, 1964) and the IMOI-model (Ilgen et al., 2005) of team effectiveness. The models present a nomological network of hypothesized relationships between exogenous variables of cultural and national diversity, mediating variables of team processes, and endogeneous team performance variables. As the models include effects between various inputs and mediators, the complexity of the models is best reflected by Ilgen et al.'s (2005) IMOI-model of team effectiveness.

The outline of Chapter 6 is presented in Figure 30.

Figure 30: Outline of Chapter 6



6.1 Cultural diversity and team processes

This first section develops a set of hypotheses aiming at the relationship between cultural diversity and team processes. Both forms, cultural diversity in the form of separation (“cultural separation”) and cultural diversity in the form of variety (“cultural variety”), can be assumed to directly influence team processes of communication, reflexivity, and conflict.

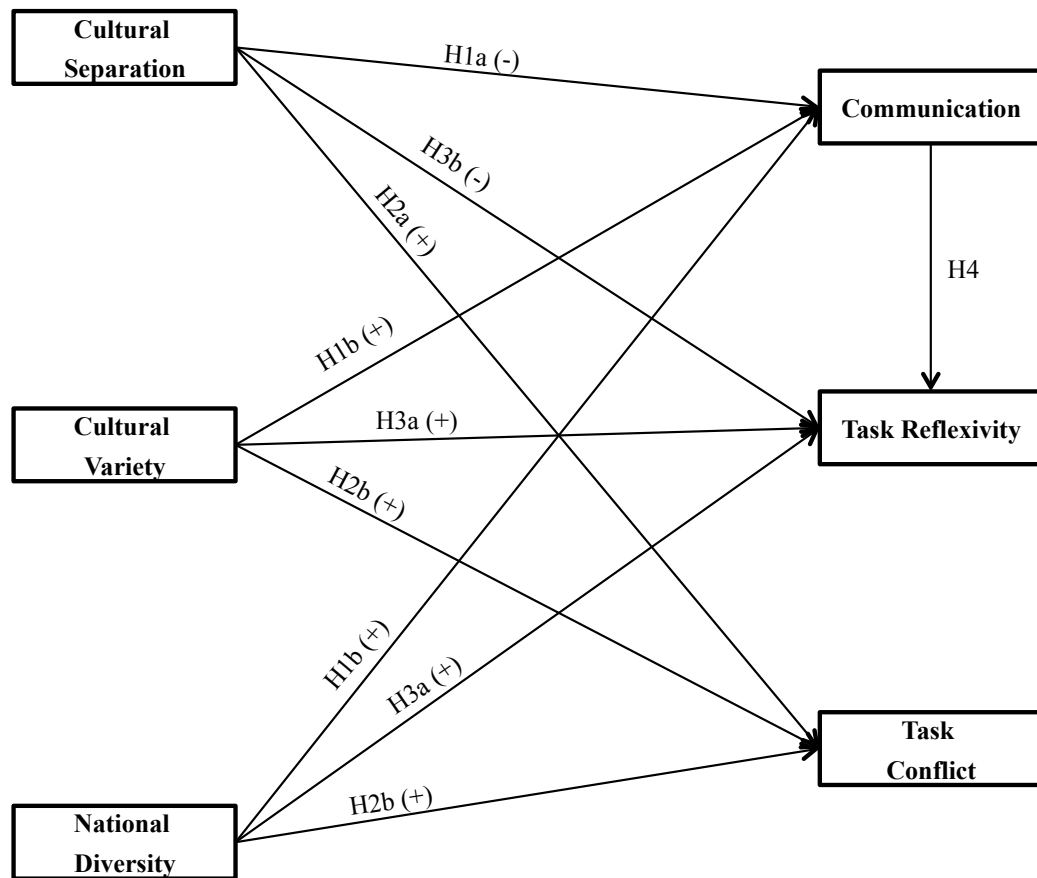
The team processes of communication, reflexivity, and conflict were selected because these processes are considered to be components of teamwork (see Chapter 2.2.3). Furthermore, these processes are considered to mediate the relationship of group composition (i.e., diversity) and team outcomes of creativity and innovativeness (see Chapter 3.6.2).

Furthermore, because previous research has often used nationality as a proxy for culture in cultural diversity research (see Chapter 5.4.2), the model also includes relationships between national diversity and team processes. Since the use of nationality as a proxy for culture in diversity research has been criticised, the testing of cultural diversity and national diversity together in one model allows to discern their individual, specific influences on team processes, as well as how these effects influence each other (Preacher & Hayes, 2008; Chin, 2010). Furthermore, integrating multiple predictor variables (in this case cultural variety, cultural separation, and national diversity) in the same model allows to determine the relative magnitude of each effect compared to other effects (Preacher & Hayes, 2008).

National diversity is constantly operationalized as reflecting a potentially valuable variety of experiences, perspectives, and social network ties (Kearney et al., 2009), or in other words, in the form of variety. National diversity can only be meaningfully operationalized in this form, because nationality is a categorical variable (Harrison & Klein, 2007). Hence, for being methodologically correct, the scale level of nationality (nominal scale) only allows assessing national diversity with Blau’s (1977) index or Teachman’s (1980) index. Therefore, national diversity in the form of variety is based on information processing and human cognition theories – which conforms to cultural variety. If national diversity was a useful proxy for cultural variety in research, it should have similar effects as cultural variety in the nomological network. To test a similar behaviour in the nomological network, this research needs to assume that hypotheses for cultural variety are also valid for national diversity. For more clarity in argumentation, and to avoid repeating similar theoretical arguments from cultural variety and national diversity, the hypotheses for cultural variety will therefore be extended to national diversity.

The entire model is depicted in Figure 31 below. The model and the underlying hypotheses will be developed in the following subsections.

Figure 31: Theoretical model for effects of cultural and national diversity on team processes



6.1.1 Cultural diversity and the quality of workgroup communication

Communication in a basic sense describes the sending and receiving of messages between people in which information, ideas, understandings, and feelings are transferred between team members (Pelled, 1996). It is a social process of interaction between team members that extends beyond the mere transfer of messages (Ochieng & Price, 2010). Team communication is a necessary and relevant process, for instance to create a shared identity and a shared context within a team (Hinds & Mortensen, 2005). It is also related to the satisfaction with working in the group (Lauring & Selmer, 2011). For these reasons, communication is considered as a necessary coordination mechanism of teamwork (Salas et al., 2005).

Högl and Gemünden (2001) conceptualize that the quality of team communication is described along frequency, formalization, structure, and openness of the information exchange. Frequency describes when team members communicate extensively, often, and

for a longer time with each other (p.437). Frequent communication thus refers to the quantity of information that is transferred and to the ability to share knowledge (Lauring & Selmer, 2011) between team members. Furthermore, it is related to the social integration within a group (Forsyth, 2010).

The degree of formalization in communication relates to the spontaneity of communication. Where formal communication requires preparation and planning to occur (e.g., written reports), informal communication is more spontaneous (e.g., talks in the hallway). Spontaneous and casual communication is necessary to healthy functioning of teams as it signals availability (Hinds & Mortensen, 2005). Furthermore, Högl and Gemünden (2001) suggest that informal, spontaneous communication is beneficial for innovativeness, as it eases the sharing of ideas and contributions.

Direct communications among team members is another relevant criterion for communication quality, for it is faster and more reliable than through mediators (Högl & Gemünden, 2001). Also for knowledge transfer between two members of a group, direct communication is considered as beneficial (Gerybadze, 2003).

In addition, open communication is regarded as a necessary component of team communication quality (Högl & Gemünden, 2001). It is considered to increase the information processing capacity of a team (Gladstein, 1984) as only communicated knowledge and experience can be integrated and used within the team for innovative problem solving (Högl & Gemünden, 2001).

Research on cross-cultural and intercultural communication suggests that culture affects communication intensity, styles and effectiveness (e.g., Gudykunst, 2003; Pekerti & Thomas, 2003). For instance, Hall's (1976) seminal work on high- and low-context cultures distinguishes between communication styles in which meaning is either transferred explicitly with spoken words or implicitly based on prior knowledge, situational cues or the setting. With regard to bringing across a message, cross-cultural communication has observed differences between encoding and decoding of messages. Same words have different meanings across cultures and language structures differ across cultures in verbal communication (Gao, 2009). Furthermore, cultural differences become obvious in the area of non-verbal communication, e.g., in kinesics (French, 2010), proxemics, or tones of voice (Trompenaars & Hampton-Turner, 1998). These cultural differences are expected to impact communication in culturally diverse workgroups, and the following sections aim at developing hypotheses on effects for cultural separation and variety.

Cultural separation and communication. Differences in communication styles or patterns bear the risk to cause misunderstandings between people of different cultures (Peltokorpi, 2007). Cultural separation is strongest when workgroups are separated into culturally homogeneous subgroups. In this situation, cultural differences in communication and associated high probabilities of misunderstandings can be expected to negatively affect perceived communication quality and effectiveness (Hubbert et al., 1999) at group-level. Furthermore, when team members experience a higher uncertainty and anxiety in intercultural communication (Gudykunst, 1998), this may cause discontent with the communication quality and may lead to communication breakdowns across subgroups. Such communication breakdowns from cultural differences were for instance found in global virtual teams (Daim et al., 2012).

Furthermore, when cultural identities are salient in workgroups with high cultural separation, in-group bias between team members of same cultures should be fostered because intercultural communication makes cultural differences explicit (Gudykunst, 2003; French, 2010). According to social identity theory, outgroup team members from different cultures are more likely to be discriminated. As a consequence, communication quality should be lower when team members only or predominantly communicate and share information within the ingroup. Or, information shared by outgroup members is trusted less and will more likely be disregarded. Social identity and categorization theories postulate the importance of a positive distinctiveness, implying that own perspectives are more likely to be adopted and followed than dissenting communication from outgroup members. Empirically, Adenfelt (2010) confirmed that faultlines between transnational subgroups create communication problems in organizational-level research. This leads to the first hypothesis:

H1a: Cultural separation has a negative effect on communication in teams.

Cultural variety and communication. In contrast to cultural separation, the diversity form of variety with the associated variety in perspectives, opinions, experiences and meanings can positively influence communication between members. Based on information processing theory, it can be assumed that the variety schemas from cultural diversity result in discrepant information processing objectives and responses. Individual team members are unlikely to attend full information based on their processing objective (Hinsz et al., 1997). While members from thinking-oriented cultures tend to emphasize the availability of full information, members from doing-oriented cultures rather attend to actionable information (Maznevski & Peterson, 1997). Therefore, it can be assumed that different information

processing objectives between members of a variety of cultures leads to more awareness of communication contents.

In addition, information processing theory suggests that information will be more thoroughly discussed and more alternatives will be included when culturally different members produce different meanings to information (Hinsz et al. 1997). The outcome will be a wider and deeper information processing capability, manifested in more and richer communication (Daft & Lengel, 1986). Put differently, teams with high cultural variety cross multiple boundaries within their team. Consequently, message complexity in teams with cultural variety is higher, leading to a more complex and more intensive communication among members (Maznevski & Chudoba, 2000).

Similar predictions can be made based on cognition theory. From this theoretical point of view, cultural variety implies that culturally different team members have different mental frames to organize, structure and make sense of perceived information (Austin, 1997). Hence, the more different mental frames are available to a team (i.e., the higher cultural variety is), the more different interpretations and ideas are expected to occur when discussion information or a problem that needs to be solved. When team members become aware of the discrepancies between own and other members' interpretations, cognition theory predicts active and conscious thinking in which individuals actively seek for new and additional information (Austin, 1997). In other words, when culturally different team members express their divergent views on the information, cognition theory suggests increased curiosity and discussion within the team. Hence, more and better communication will emerge to share and create knowledge and to reach a mutual understanding between members (Lauring & Selmer, 2011).

Based on cognition and information processing theories, it is proposed that cultural variety is an enabler of communication in teams:

H1b: Cultural variety has a positive effect on communication in teams.

6.1.2 Cultural diversity and conflict

Conflict can be defined as perceived incompatibilities between people or of their views (Jehn, 1995, p.257; Jehn & Bendersky, 2003, p.189). Conflict was long considered to have two dimensions (Guetzkow & Gyr, 1954) of task disagreement and socio-emotional, interpersonal arguments (Pelled, 1996). Both dimensions have been empirically confirmed in

research (Jehn, 1997) and have shown to bring about different effects (Jehn & Bendersky, 2003).

Task conflict includes disagreements between team members with regard to the content of the task (Guetzkow & Gyr, 1954, p.380; Jehn, 1995, p.258; Pelled, 1996, p.619). It is sometimes also referred to as cognitive conflict, substantive conflict, content conflict, or realistic conflict (Jehn & Bendersky, 2003, p.200). Task conflict includes differences in viewpoints, ideas, and opinions, as well as the nature and importance of goals and decision areas (Jehn & Bendersky, 2003; Pelled, 1996). In this sense, task conflict can be described as *“intellectual opposition among participants, deriving from the content of the agenda.”* (Guetzkow & Gyr, 1954, p.380). When this type of conflict occurs, team members disagree on nature and importance of tasks, decision areas, or appropriate courses of actions.

Relationship conflict describes interpersonal incompatibilities between members of the team, typically including *“tension, animosity, and annoyance”* (Jehn, 1995, p.258). Pelled (1996) characterizes the interpersonal clashes as rooted in emotional aspects of relationships inducing anger, distrust, fear, and frustration. In this sense, relationship conflict is also labeled as emotional or affective conflict.

Besides task and relationship conflict, process conflict was more recently introduced as a separate conflict dimension in workgroups (Jehn, 1997; Jehn et al., 1999; Jehn & Bendersky, 2003; Jehn & Mannix, 2001). It relates to the means used to accomplish a task. In contrast to task conflict, process conflict is not about the task content, but deals with strategies and procedures to approach and execute the task. Furthermore, the distribution of workload between team members is included in process conflict (Jehn & Bendersky, 2003).

Task conflict has repeatedly been associated with facilitating creativity and innovativeness for instance by stimulating critical thinking (de Wit et al., 2012). However, de Dreu and Weingart's (2003) meta analysis has generally shown negative effects on team productivity. In order to increase empirical evidence in this disputed research area, task conflict was selected as a relevant team process in this research.

Cultural separation and task conflict. Cultural separation is theoretically grounded in social identity and categorization theories (see Chapter 4.4.3). Cultural differences assumingly cause social categorization processes between members. Social categorization theory predicts that social categorization processes cause ingroup-favorism and discrimination of the outgroup (Jehn et al., 1999). Under these conditions, opinion, solutions,

or ideas articulated by outgroup members gain less attention and are less valued than those brought about by ingroup members. Between subgroups, it is considered that conflict about status or winning are likely to emerge (Tajfel, 1982), including setting the agenda and enforcing own ideas. When team members realize their disagreement on nature and importance of tasks, decisions, or appropriate courses of actions, task conflicts are expected to emerge in which the different points of view, ideas, and opinions are discussed in order to reach a consensus or to win the discussion. With increasing separation between subgroups, tasks conflicts can be expected to be fiercer and more frequent since more different opinions and solutions are likely to exist which each subgroup wants to force into the agenda. This leads to the hypothesis that:

H2a: Cultural separation has a positive effect on task conflict.

Cultural variety and task conflict. Cultural variety is theoretically based on information processing and cognitive theories suggesting differences in perspectives, cognitive structures and underlying knowledge repertoires. Due to team members' different belief and knowledge structures, it is considered that they have divergent preferences and interpretations of tasks (Pelled et al., 1999b). Information processing theory predicts task conflicts since the same information produces different meanings across diverse members. Cultural variety is likely to be associated with differences in processing objectives of the same information. Therefore, cultural variety is expected to lead to different and conflicting interests, points of view, goals, and approaches introducing task conflicts within such teams (Jehn et al., 1999). Different mental representations among members may also create task conflicts, when team members exhibit different and unpredictable (re-)actions due to differences in their underlying cognitive processing (Austin, 1997; Hinsz et al., 1997). In such situations, task conflicts are expected to emerge in which different points of view, courses of action, and desired results are consolidated. Hence,

H2b: Cultural variety has a positive effect on task conflict.

6.1.3 Cultural diversity and task reflexivity

Team reflexivity can be understood as the extent to which teams collectively reflect upon and consequently modify their functioning, objectives, strategies, and processes (Tjosvold et al., 2004; West & Anderson, 1996; West & Hirst, 2005). The construct of team reflexivity is conceptualized as having two discrete dimensions of task and social reflexivity (West, 2004).

The two factor structure was empirically confirmed in a factor analysis by Carter and West (1998).

Social reflexivity comprises several items related to team conflict, which is assessed separately in this research. To avoid double-measuring similar concepts (and to secure discriminant validity of the variables), and in accordance with what has been previously practiced (e.g., Tjosvold et al., 2004), this research is limited to the first factor: task reflexivity.

Task reflexivity essentially consists of attentively monitoring and evaluating a team's task achievements, continuous planning, and adaption of plans, strategies, and objectives (West & Hirst, 2005). Teams show high degrees of reflexivity when their planning is characterized by great detail and inclusiveness, as well as a hierarchical structure of plans. In contrast, when teams show low degrees of reflexivity they largely rely on the use of habitual routines (Schippers et al., 2003). In this sense, reflexivity is a team process that describes typical team action and behaviour (Schippers et al., 2003). The construct of task reflexivity has large overlaps with "adaptability", as defined in Salas et al. (2005). Both aspects of recognizing deviations from expected or desired results and adjusting team actions are also reflected by task reflexivity. In this sense, similar to adaptability, the important role of reflexivity is to focus teams on their purpose, as well as to identify and respond to unexpected demands or changes (Salas et al., 2005).

Cultural variety and task reflexivity. Building on information processing and decision making theory, researchers argue that the divergent viewpoints introduced by cultural variety are expected to stimulate task reflexivity (Schippers et al., 2003; van Knippenberg & Schippers, 2007). The underlying assumption is that when diverse teams possess of different perspectives and information due to their members' unique cultural experiences, they use these informational resources for a more holistic consideration of alternatives. Hence, team planning should include greater detail with more alternative courses of action. Information about work context and progress of the team is also interpreted differently with increasing variety of cultures according to information processing and cognition theory. The increased information processing capacity should allow for better evaluating the achievements and a more precise adaptation of plans and strategies, as well as for being more attentive to unexpected outcomes.

Furthermore, task reflexivity is essentially conceptualized as a cognitive process. Cognition theory suggests that cognitive processes benefit from cultural variety – e.g., when different individual schemas in the group yield surprise effects and trigger active mode thinking (Austin, 1997). Hence, when cultural variety increases the amount of different schemas

available to a group, more surprise effects are expected to cause active thinking in which team members actively reflect upon their processes, objectives and task achievements.

Therefore, Hypothesis 3a reads:

H3a: Cultural variety has a positive effect on task reflexivity.

Cultural separation and task reflexivity. To collectively reflect upon their functioning, objectives, strategies, and processes, teams require a positive and coordinated work atmosphere. For this reason, Salas et al. (2005) include adaptability (a factor closely related to task reflexivity, see above) in their Big Five framework of teamwork. In contrast, cultural separation is defined as a teamwork context, in which cultural differences separate a team into subgroups across which cooperation is hindered. While task reflexivity requires a team to include different objectives, opinions and strategies and to consolidate them into an overall plan with different alternatives, cultural separation and the associated social categorization processes rather suggest ingroup-bias and disregard of outgroup ideas and perspectives. Furthermore, task reflexivity as an essentially cognitive process within a workgroup requires identifying problems and room for improvement, or put differently, a self-critical intercourse with information within a group. When a team is separated into subgroups that compete for a positive social identity, social categorization theory suggests a reduced likelihood that members openly discuss drawbacks and self-critically reflect upon problems and alternative courses of action. Rather, social identity theory suggests collective normative behaviour of ingroup members (Hogg & Terry, 2000). Hence, when admitting errors undermines the positive distinctiveness from the outgroup, social identity processes are expected to impede a reflective environment at the group-level.

This leads to the following hypothesis:

H3b: Cultural separation has a negative effect on task reflexivity.

6.1.4 Communication mediating the relationship between cultural diversity and task reflexivity

Gebert (2004) points to research by Stasser and Titus (1985) that groups decide only based on shared information instead of using all informational resource available to a team. When teams are culturally diverse and members have different cognitive structures, ideas, and viewpoints, these informational resources need to be shared at a team level to increase a team's ability to integrate them into reflection, plans, and possible courses of action.

Similarly, Schippers et al. (2003) point to the fact that team members need to communicate and discuss task-related information to arrive at a common understanding of their goals and to exhibit a high degree of reflexivity.

De Dreu (2002) suggests that increasing communication and discussion increases the chance of voicing dissenting views, and the attention given to dissenting opinions or minority positions. Hence, a high quality of team communication with spontaneous, frequent, and open sharing of information can be expected as a necessary antecedent to reflexivity.

Furthermore, cultural separation was expected to negatively influence communication due to misunderstandings, ignorance, and ethnocentric behaviour, and cultural variety was hypothesized to positively affect communication due to an increased information processing capability (see above). These considerations suggest a mediating effect from communication:

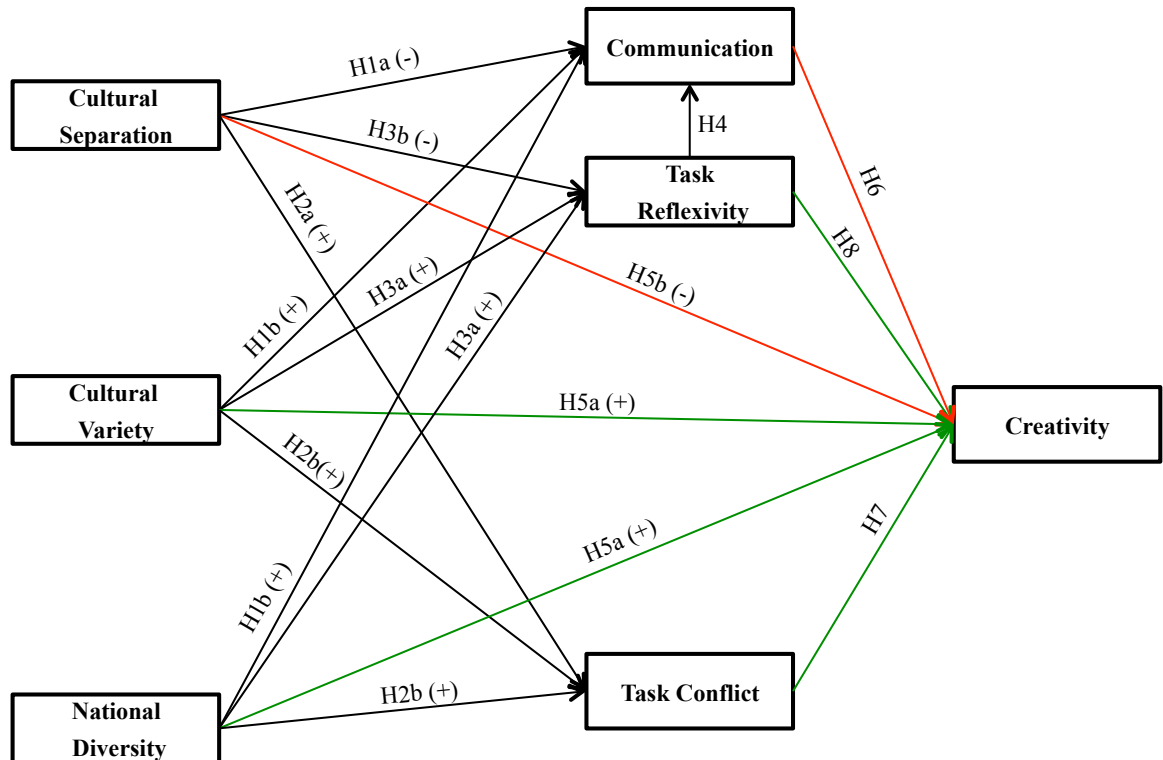
H4: Communication mediates the relationship between cultural diversity and task reflexivity.

6.2 Cultural diversity and creativity

In this section, a theoretical model is developed that investigates how cultural diversity relates to creativity in teams. The ability of teams to be creative and to develop new and useful ideas is relevant for producing innovative outcomes and for problem-solving (see Chapter 3). The advantage of teamwork is based on the integration of perspectives and ideas of members to carry out complex, dynamic and uncertain tasks effectively and efficiently (Grant, 1996). When applying their expertise to a task or a problem, teams need to generate ideas for possible approaches, methods, and solutions. Therefore, creativity is needed along the entire process of innovative teamwork (West, 2002b).

In this model, cultural separation and cultural variety will influence workgroup creativity as input variables, mediated by team processes of task reflexivity, communication, and task conflict. Again, national diversity will be included to investigate whether it behaves similarly as cultural variety in the nomological network. For clarity in argumentation, and to avoid repeating similar theoretical arguments, the hypotheses for cultural variety will therefore be extended to national diversity. The complete theoretical model is shown in Figure 32, and the associated hypotheses will be developed in the following sections.

Figure 32: Theoretical model of effects from cultural and national diversity on creativity



Note: Hypotheses developed in the previous model are shown in black, while new hypotheses are shown in green (positive relationship) and red (negative relationship).

6.2.1 Cultural variety and creativity

Models of group creativity suggest that team members can be cognitively stimulated by ideas of other members (Nijstad & Stroebe, 2006; Paulus, 2000). The underlying assumption of an increased creativity due to cognitive stimulation is that sharing ideas increases the chance to come across ideas or categories of ideas that single persons would not have thought of. The SIAM model (Nijstad & Stroebe, 2006) suggests that cognitive stimulation describes the activation of new images in WM when ideas of others serve as external cues. When groups have semantically diverse stimuli, more ideas from more different categories should be generated. Hence, an increased variety of ideas and cognitive structures can be considered as beneficial for idea generation. In addition, because idea sharing reduces the amount of cognitive failures, the variety of ideas and images should lead to a later abortion of the idea generation phase (Nijstad & Stroebe, 2006).

Information processing theory (Hinsz et al., 1997) suggests that information about the problem at the start of the creative process (Nijstad & Stroebe, 2006) is interpreted

differently when team members lack a shared representation of the information. When culture relates to different perceptions and interpretations of information (see above), then cultural variety should allow groups to process more divergent information. This should result in more divergent thinking (i.e. higher creativity, see Silvia et al., 2008), by developing and considering multiple perspectives and creating more alternatives (Hinsz et al., 1997).

Cognition theory also suggests higher creativity in groups when culturally different team members apply different scripts in their thinking (Austin, 1997). Due to the variety of culturally different scripts, thinking modes and knowledge structures of team members, interpretations and solutions offered by other members are likely to be heterogeneous. Consequently, ideas and solutions of others are likely to be perceived as novel. The novelty of solutions to a problem should evoke a surprise effect that is expected to cause active thinking (Louis & Sutton, 1991). In other words, the discrepant interpretations and actions of a team's culturally diverse members are expected to stimulate the critical inquiry of schemas and their suitability for the creative problem, resulting in active search for and processing of information that stimulates group creativity (Austin, 1997).

Empirically, Tadmor et al. (2012) have shown creativity gains in dyads with multicultural experiences. They argue that such dyads exhibit more flexible and multidimensional forms of thinking, are able to access different knowledge systems and have a broader conceptual space from which categories of ideas can be drawn (Tadmor et al., 2012). Therefore, cultural diversity is considered to allow activating new categories of ideas as stimuli in the idea generating process.

Together, theoretical reasoning and empirical evidence suggest that cultural variety results in a cognitive stimulation of team members and leads to higher group creativity:

H5a: Cultural variety has a positive direct effect on group creativity.

6.2.2 Cultural separation and creativity

The positive effect on creativity should not be found for cultural separation because it is assumed that cultural separation with underlying social categorization processes create a group context, which impedes creative performances in teams.

Creativity researchers have found that negative moods impede creative performance (Baas et al., 2008), while information seeking and learning orientation (Hirst et al., 2009), as well as high cognitive capacities, psychological safety, and positive affect increase creativity in

work settings (Elsbach & Hargadon, 2006). Cross-cultural research has found that people show affective, cognitive, and behavioural reactions when being exposed to different cultures (Ward et al., 2001). The more culturally distant people are, the more will they experience and have to cope with culture shocks (p. 267). With more cultural separation in a workgroup, the emergence of culture shocks should increase. Ward et al. (2001) outline that affective responses to culture shocks include confusion, anxiety, disorientation, suspicion, bewilderment, and perplexity. Research on affective responses draws on stress and coping literature, because culture shocks are perceived as difficult, awkward, stressful, and overwhelming. Cognitively, cross-cultural contact challenges established cultural verities that may evoke stereotyping, prejudice, and discrimination (p.269). Hence, when cultural separation triggers social categorization processes that may involve culture shocks between team members, then stereotyping, prejudice, and discrimination should create a work context in teams that impedes creative performance. This pattern confirms to predictions by cognition theory (Austin, 1997) that team members switch back to automatic cognitive processing under conditions of higher anxiety and uncertainty – hence, the cognitive potential is decreased and creative performance of teams are lower.

Furthermore, cognitive stimulation requires a large variety of different ideas and categories of ideas. While cultural variety is associated with multiple different cultural perspective, cultural separation reaches highest values when team members split up into two culturally homogeneous subgroups (Harrison & Klein, 2007). Hence, a high cultural separation is associated with a lower potential for cognitive stimulation. Similarly, faultline theory suggests that when more cultural values are aligned among members of a group, the team composition yields a lower variety, more limited cognitive abilities, and consequently less creativity in groups (Lau & Murnighan, 1998).

In addition, the SIAM model suggests that cognitive stimulation requires team members to carefully attend to their fellow members' ideas (Nijstad & Stroebe, 2006). When cultural separation prevails in diverse groups, social identity and categorization theories suggest ingroup-favourism and discrimination of the outgroup (e.g., Tajfel, 1982). As a consequence, it can be expected that ideas by outgroup team members will be marginalized and ignored (Dahlin et al., 2005). Such ethnocentric effects from cultural diversity are also suggested by Cramton and Hinds (2004) and may restrain a team from leveraging possible creativity gains.

Therefore,

H5b: Cultural separation has a negative direct effect on group creativity.

6.2.3 Team communication mediating the relationship of cultural diversity and creativity

Cultural diversity is expected to influence communication in workgroups. More specifically, cultural separation was expected to negatively influence communication due to misunderstandings, ignorance, and ethnocentric behaviour from social categorization processes. Cultural variety in contrast was expected to positively affect communication due to an increased information processing capability (see above).

Communication is generally seen as an inhibiting factor to workgroup creativity, although some form of communication is needed in creative teams to exchange and share ideas between members for cognitive stimulation. Negative effects are associated with production blocking in teams. It was argued that communication distracts members from developing new ideas (Nijstad & Stroebe, 2006). The periods of delay when one member communicates an idea is considered to block other members from developing own ideas (Diehl & Stroebe, 1987). Furthermore, ideas need to be expressed soon after they have been generated (Diehl & Stroebe, 1991). Because storage in WM is limited, team members have to rehearse ideas that are not instantly expressed in order to not forget them (p.393). Furthermore, during the waiting time in which another member speaks, team members need to concentrate their attention on the communication process to enter their own contribution as soon as there is a pause or an opportunity (p.398). Moreover, team communication may also negatively influence creativity through self-censoring, when team members suppress some ideas they were going to contribute because they appear less relevant or original in the light of other ideas (p.402).

Hence, the production blocking effect suggests that communication between team members distracts their attention from developing new and additional ideas. Furthermore, communication also involves task-irrelevant behaviour, when members tell stories or elaborate ideas in more detail than required (Paulus, 2000). In sum, the more frequent, open, informal and spontaneous communication in creative teams is, the more production blocking effects can be expected.

Therefore, communication can be expected to mediate the relationship between cultural diversity and creativity, leading to

H6: Team communication mediates the relationship between cultural diversity and team creativity.

6.2.4 Task conflict mediating the relationship between cultural diversity and creativity

Above, it was argued that cultural diversity in the forms of separation and variety influences the emergence and intensity of task conflicts. On the one hand, social categorization processes create task conflicts when team members realize their disagreement on nature and importance of tasks, decisions, or appropriate courses of actions to enforce one subgroup's perspective (see above). On the other hand, information processing and cognition theory suggest more task conflict to consolidate and discuss different points of view, courses of action, and desired results from different mental representations of team members (see above).

Furthermore, task conflict is widely expected to positively influence creativity in teams. It is assumed that task conflict increases the tendency of team members to scrutinize tasks and to hear minority ideas, which results in a better idea generation and more creative solutions (Bolinger et al., 2009). Likewise, Paulus (2000) suggests that conflicts due to diverse perspectives lead to more cognitive changes and divergent thinking.

Jehn and Bendersky (2003) build on research conducted by Nemeth and colleagues (e.g., Nemeth et al., 2004) suggesting that task conflict stimulates divergent thinking processes in groups. Nemeth et al. (2004) proposed and empirically found that conflict and debate in groups encourages members to freely generate ideas through discourse and due to additional cognitive stimulation. The expression of competing views in a task-related debate apparently helps teams to generate more ideas. The functional perspective of task conflict has been repeated in empirical studies (Simons & Peterson, 2000) and was adopted in management and organizational behavior textbooks (e.g., De Dreu & Weingart, 2003).

Together, it can be expected that task conflict mediates the relationship between cultural diversity and creativity, leading to the following hypothesis:

H7: Task conflict mediates the relationship between cultural diversity and team creativity.

6.2.5 Task reflexivity mediating the relationship between cultural diversity and creativity

Cultural variety was expected to positively affect task reflexivity due to different perspectives and information used as informational resources for a more holistic

consideration of alternatives. In contrast, cultural separation with associated social categorization processes and competition for positive distinctiveness was expected to result in a decreased likelihood of open reflection of problems and alternative courses of action but with collective normative behaviour. Hence, a direct relationship between both forms of cultural diversity and task reflexivity was expected (see above).

Because task reflexivity involves the reflection upon and modification of a team's functioning, researchers suggest that it is related to creativity and divergent thinking in teams (De Dreu, 2002; Schippers et al., 2003). Low degrees of reflexivity are associated with habitual routines and less active thinking (Schippers et al., 2003). De Dreu (2002) suggests that high levels of reflexivity relate to voicing and discussing different ideas and opinions, stimulating a process of shifting good from bad ideas and problem solutions. From this perspective, task reflexivity is considered to allow activating more and more different images in the SIAM model (Nijstad & Stroebe, 2006), as well as to increase the association between ideas and the problem to solve.

This leads to assume that task reflexivity mediates the relationship between cultural diversity and creativity:

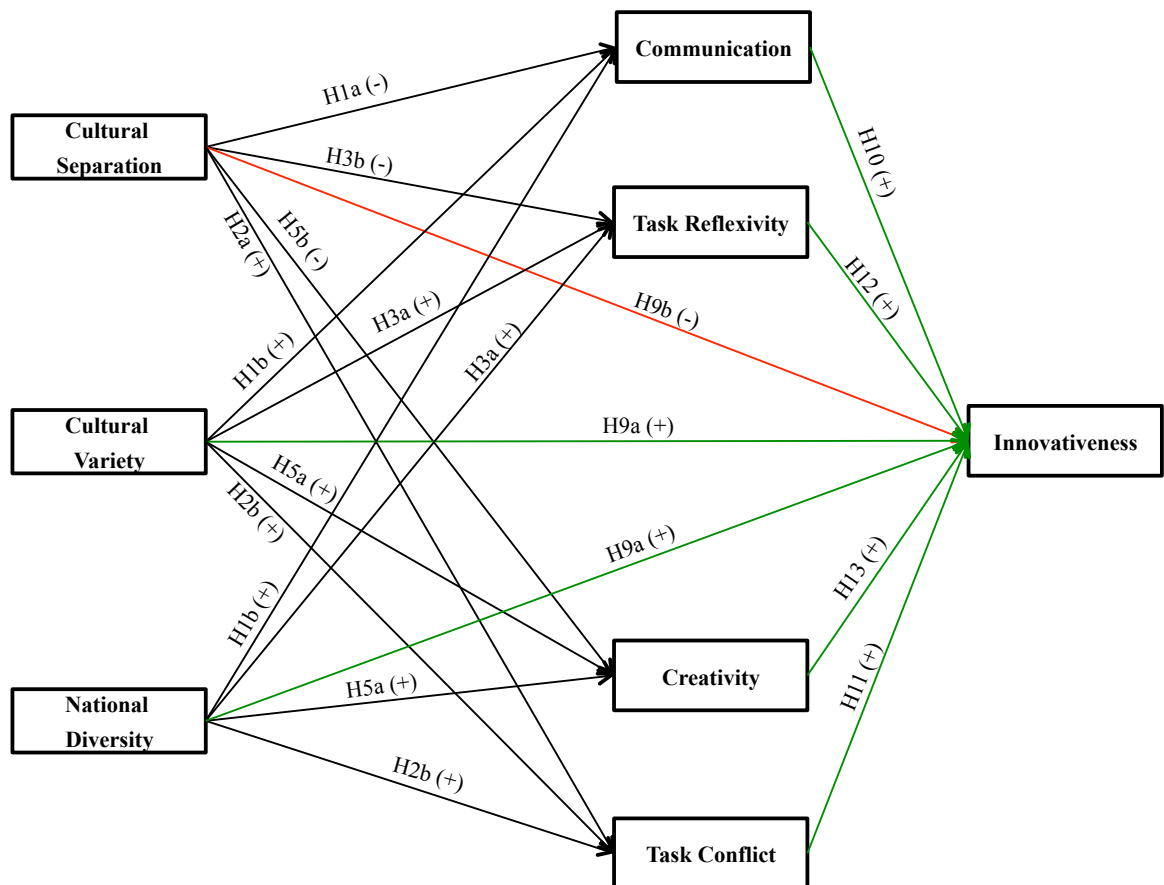
H8: Task reflexivity mediates the relationship between cultural diversity and creativity.

6.3 Cultural diversity and innovativeness

In this section, a theoretical model is developed that integrates theoretical considerations on how cultural diversity relates to innovativeness in teams. Besides the ability to generate new and useful ideas, teams need to integrate their knowledge to combine ideas, evaluate and prioritize them, as well as find ways these ideas can be enacted (Gebert et al., 2010). As described above (see Chapter 3.4.2), generated ideas only represent a potential or raw material for innovations. In addition to the creative process of divergent thinking, teams need evaluative and confirmatory processes of convergent thinking, in which high quality ideas are identified, further developed and adapted to organizational contexts, as well as subsequently implemented (Nijstad & De Dreu, 2002; Paulus, 2002; West, 2002a). Therefore, creativity is considered in this model as an antecedent to innovativeness and as a mediating variable between cultural diversity and innovativeness.

The model includes cultural separation and cultural variety as exogenous variables predicting innovativeness. Furthermore, indirect effects on innovativeness through mediating variables communication, task reflexivity, creativity, and task conflict are included in the model. As previously practised, national diversity is included to investigate its suitability as a proxy for cultural variety. Again, the hypotheses for cultural variety will be extended to national diversity. The complete theoretical model is shown in Figure 33, and the associated hypotheses will be developed in the following sections.

Figure 33: Theoretical model of effects from cultural and national diversity on innovativeness



Note: Hypotheses developed in previous models are shown in black, while new hypotheses are shown in green (positive relationship) and red (negative relationship).

6.3.1 Cultural variety and innovativeness

Following the team innovation effectiveness model suggested by Gebert (2004) and West and Hirst (2005) (see Figure 13), workgroup diversity serves as an input to innovative effectiveness of workgroups. The authors argue that diversity brings different backgrounds, personalities, skills, experiences, and orientations into a team, allowing for different

viewpoints and perspectives (West & Hirst, 2005). Based on similar argumentations, but from a resource-based perspective, cultural variety represents a valuable and unique resource to yield a higher innovativeness (Richard, 2000).

The variety of cognitive styles, contents, and interpretations that are associated with cultural variety should not only be useful for generating ideas (creativity, see above), but also in subsequent processes when ideas are evaluated and further developed for implementation. Again, argumentations rely largely on cognition and information processing theories (Austin, 1997; Hinsz et al., 1997). Cultural diverse teamwork allows integrating the divergent ideas and perspectives of members, which provide the team with a more holistic perspective and more alternatives for actions. When cultural diversity provides a broader range of information to the team (as shown for national diversity with a similar theoretical reasoning by Dahlin et al., 2005), then creative ideas should be evaluated and advanced more effectively. From this integration and learning perspective (Ely & Thomas, 2001), cultural variety integrates a greater richness of knowledge, insights, and points of view about creative ideas, which can be applied along the innovation process.

Because innovations consist of a new combination of ideas, capabilities, and resources (Fagerberg, 2005, p.10), a broader stock of these resources increases the potential for a higher innovativeness (Gebert, 2004). Based on the assumption that cultural variety is associated with a broader stock of knowledge, ideas, and perspectives, a higher innovativeness can be expected. Empirically, team members breadth of experience was found to be beneficial for innovativeness in international R&D teams (Griffith and Sawyer, 2010a).

More specifically, it was discussed that firms internationalize their innovative activities to specialize and benefit from local advantages (see Section 3.5 above). For instance, when creative ideas are developed into innovative products for multiple markets, culturally diverse workgroups can integrate specialized local knowledge about customer requirements, country-specific preferences, and legislative conditions from the countries and cultures they represent. Because this knowledge emerges from local contexts, it is sticky (von Hippel, 1994). Such sticky and location-specific (often tacit) knowledge is difficult to transfer (von Hippel, 1994). Several studies on global teamwork for innovative activities have argued that workgroups are important entities that integrate the deep understandings of country-specific requirements (e.g., Adenfelt & Lagerström, 2006; Subramaniam, 2006) and for effective local problem solving (Edmondson & Nembhard, 2009). Because increased cultural variety increases the representativeness of overseas' tacit knowledge within a workgroup, such

different knowledge is expected to help improve a team's innovative capabilities (Subramaniam & Venkatraman, 2001).

In sum, cultural variety with its associated informational and cognitive advantage of more ideas, perspectives, points of view, capabilities, and resources, which provide a higher potential for new combinations that should increase the team's innovativeness. Furthermore, because cultural variety increases the stock of specialized and sticky local knowledge, creative ideas can be better evaluated from more different perspectives and more local knowledge can potentially be contributed to advance ideas into more innovative solutions along the innovation process.

This leads to the following hypothesis:

H9a: Cultural variety has a direct positive effect on innovativeness.

6.3.2 Cultural separation and innovativeness

Cultural separation, in contrast to cultural variety, is assumed to have a negative impact on innovativeness. Although cultural separation is a form of diversity, the available stock of knowledge cannot be considered to be significantly broadened, because cultural separation is highest when team members split into two culturally homogeneous subgroups (Harrison & Klein, 2007). Hence, cultural separation is not associated with a broad knowledge repertoire about local market requirements and cultural values or behaviours.

Instead, it can be assumed that cultural separation creates a work environment in which ideas and knowledge are less likely to be integrated, where information is processed less effectively, and decision-making is hindered. Cultural separation is associated with social categorization processes that involve cognitive and social consequences, which are detrimental to innovativeness.

For a high innovativeness, team members need to transfer and integrate their sticky knowledge and their ideas within the group's problem solving activities. From a cognition theory (Austin, 1997) perspective, unusual environments, uncertainty, threatening, and stress reduce the level of active processing within a group. Culture shocks and social categorization decrease active processing of information and team members are expected to switch to automatic processing. On the one hand, automatic processing hinders the active search and processing of new ideas and knowledge as required for a high innovativeness. On the other hand, social identity theory suggests that ideas by the outgroup are marginalized and ignored (Dahlin et al., 2005), especially when they contradict beliefs of the ingroup. Hence, when

ideas need to be integrated and evaluated, social identity processes privilege ideas and knowledge by the ingroup and tend to disfavour those articulated by outgroup members. Although cultural separation reflects a form of diversity, social categorization processes and associated ingroup favouritism refrain from capitalizing on their diversity.

In addition, also from a cognition perspective, Gerybadze (2003) differentiates knowledge types by the interpretative coherence into canonical and equivocal knowledge. The first exists when all members of a team share the same frame of reference, the second when members use different frames of reference. Equivocal knowledge implies that the same knowledge base is used and interpreted differently. The use of different frames of reference may lead to the creation of new understandings and insights (Vlaar et al., 2008), but also leads to omission, misunderstandings, and errors (Gerybadze, 2003; Vlaar et al., 2008). These errors may negatively affect the required fair and result-oriented evaluation of ideas (Gebert, 2004; West & Hirst, 2005). Research on TMTs has shown that the salience of culture in social categorization processes causes in-group bias, differences in advice-seeking behaviour, and has negative effects on efficiency and consensus in decision-making (Salk & Brannen, 2000).

From a social perspective, the transfer of sticky and tacit knowledge is time-consuming, complex, and requires frequent interaction between team members (Hippel, 1994). Yet, cultural separation and social categorization processes are considered to create a work environment, which disfavors learning, high productivity, and innovativeness. Bouncken et al. (2008) found that negative attitudes towards diversity decrease innovative performance of teams. When culture separates team members from each other, faultlines lead to lower innovative performance (Bouncken & Winkler, 2010). From a separation perspective, case studies have shown how cultural separation involves destructive patterns and environments within teams (DiStefano & Maznevski, 2000). In such work contexts, the energy and concentration (as needed to be innovative) was drained by negative stereotyping.

Within workgroups, Barinaga (2007) found from discourse research that cultural diversity highlights cultural differences between members, causes confusion and misunderstandings between members. In addition, because cultural differences have a negative impact on trust and trustworthiness between members (Atamer & Schweiger, 2003; Barczak & McDonough, 2003), ideas and knowledge from team members of the cultural outgroup are valued less and considered as less credible (Li, 2010). Therefore, knowledge transfer is inhibited in culturally diverse teams (Müthel et al., 2012). Furthermore, discrimination between subgroups negatively affects organizational commitment and citizenship (Triana & García, 2009), as required for teams to be innovative (Gebert, 2004).

In sum, the lower processing ability of innovative ideas and knowledge, and the creation of a work environment, which is detrimental to innovativeness suggest that:

H9b: Cultural separation has a direct negative effect on innovativeness.

6.3.3 Quality of workgroup communication mediating the relationship between cultural diversity and innovativeness

Above, it has been argued that teamwork is beneficial to innovativeness since it allows a more holistic and integrated perspective on a problem, as well as better coordination (see Chapter 3.6.1). Although a negative effect from communication on creativity was hypothesized due to production blocking effects (see above), communication is considered as beneficial to innovativeness since the task exceeds idea generation and focuses on the integration of perspectives and elaboration of ideas. To integrate their perspectives, team members need to communicate with each other and share their opinions and expertise. In other words, the information flow between members is considered as an antecedent to innovativeness (Högl & Gemünden, 2001).

Several empirical studies have shown an effect of team communication on innovativeness (e.g., Moenaert et al., 2000). Gebert (2004) argues that only teams with active and open communication are able to realize their potential to recombine the diverse knowledge and expertise. The quality of the solution in a team with good and open communication should thus exceed the best idea generated by individuals in nominal groups. Such knowledge sharing largely depends on communication quality in transnational teams (Lagerström & Andersson, 2003).

In addition, several researchers have argued that communication quality relates to the formation of trust and relationships, as well as a cooperative atmosphere (Barczak & McDonough, 2003) within a team. Further positive effects are suggested for creating a shared identity and context (Hinds & Mortensen, 2005). Such a work environment is considered as beneficial for team innovative performance (Gebert, 2004; West & Hirst, 2005).

Since communication was hypothesized to be influenced by both forms of cultural diversity (see above), it can be assumed that communication mediates the relationship between cultural diversity and innovativeness.

H10: Communication mediates the relationship between cultural diversity and innovativeness.

6.3.4 Task conflict mediating the relationship between cultural diversity and innovativeness

There is an on-going debate in literature about whether task conflict has constructive effects or not (de Wit et al., 2012; Jehn & Bendersky, 2003). Although the overall effect from task conflict on distal team outcomes is zero (de Wit et al., 2012), a positive effect on innovativeness is often suggested in literature (e.g., de Wit et al., 2012; Jehn & Bendersky, 2003; Pelled et al., 1999b; Tjosvold, 1997).

Positive effects on team innovativeness are often argued based on superior decision making due to prevention of premature consensus and the stimulation of critical thinking. For instance, Jehn and Bendersky (2003) argue that the increased number of opinions, their critical evaluation associated with an intellectual challenge can lead to more consultative interaction, better assessment of alternatives, a more accurate perspective of the situation, and better problem-solving. Hence, task conflicts are seen as increasing group members' tendency to scrutinize a problem and engage in deep and deliberate processing of relevant information, potentially leading to highly creative and innovative group outcomes (De Dreu & Weingart, 2005).

A similar perspective that task conflicts allow combining and integrating ideas and perspectives of team members was suggested by Tjosvold (1997). When members have compatible goals, the controversy contributes to a full exchange of perspectives and a better understanding of issues, which fosters the development of innovative solutions.

Innovative activities are characterized by high complexity and uncertainty (see Chapter 3.1). The integration of large amounts of information, multiple perspectives, and various potential courses of actions in task conflicts is considered as beneficial (De Dreu & Weingart, 2005), since the active management of contradictory desires and information helps overcoming confirmatory bias in decision making and dealing with complexity and uncertainty.

Because cultural diversity is expected to affect task conflicts, and since theoretical perspectives suggest a positive effect from task conflict on innovativeness, it is hypothesized:

H11: Task conflict mediates the relationship between cultural diversity and innovativeness.

6.3.5 Task reflexivity mediating the relationship between cultural diversity and innovativeness

West (2002a) and Tjosvold et al. (2004) suggest that reflexivity relates to team learning and improved performance by better problem solving. Reflexivity is conceptualized as a team process in which teams integrate their perspectives, develop plans by hypothesizing on possible outcomes of actions and interpret results to modify their strategies (see Chapter 6.1.3). Because problem-solving is one form of organizational learning that fosters innovativeness and since innovation is regarded as a problem-solving process (Caloghirou et al., 2004), team reflexivity should also yield an improved performance in innovativeness.

Furthermore, West (2002a) suggests that greater detail of planning from reflexivity relates to a better preparedness to introduce an innovation. The planning is suggested to create a conceptual readiness of the team to introduce the innovation and directs the team members' attention and action towards the implementation goal. Empirically, Carter and West (1998) and Tjosvold et al. (2004) have shown a relationship between team reflexivity and innovativeness. When cultural diversity is expected affect task reflexivity, and if task reflexivity has a positive effect on innovativeness, this leads to the following hypothesis:

H12: Task reflexivity mediates the relationship between cultural diversity and innovativeness.

6.3.6 Creativity mediating the relationship between cultural diversity and innovativeness

Creative ideas serve as inputs into the innovation process (see Chapters 3.4.2). For instance, West (2002a) conceptualizes creativity as a process leading to possibly new and useful ideas that may be turned into an innovation. Likewise, Paulus (2000) suggests that creativity allows unfreezing from dominant and old perspectives delivering new and useful ideas. Particularly in the first stages of the innovation process, creativity is considered as a necessary antecedent to innovativeness when problems and possible solutions are identified (Kobe, 2007; West, 2002a). In later evaluative and selective steps, teams identify those high quality ideas that can be implemented (Nijstad & De Dreu, 2002). Although more convergent thinking is required to adapt an idea to organizational capabilities and market requirements in later stages of the innovation process, creativity is required along the entire innovation process to overcome possible barriers and problems (West, 2002a).

Because creativity is necessary to generate innovative ideas, and because it is required along the innovation process, a high creativity in teams should be associated with a higher team

innovativeness. Building on the previous hypotheses on the relationship between cultural diversity and creativity (see above), it can be assumed that creativity mediates the relationship between cultural diversity and innovativeness. The associated hypothesis reads:

H13: Creativity mediates the relationship between cultural diversity and innovativeness.

6.4 Summary and implications

In the sixth chapter, several theoretical models were developed, which comprise theoretical relationships between cultural and national diversity, team processes, and performance criteria. These theoretical models include direct and multiple mediating effects among the variables.

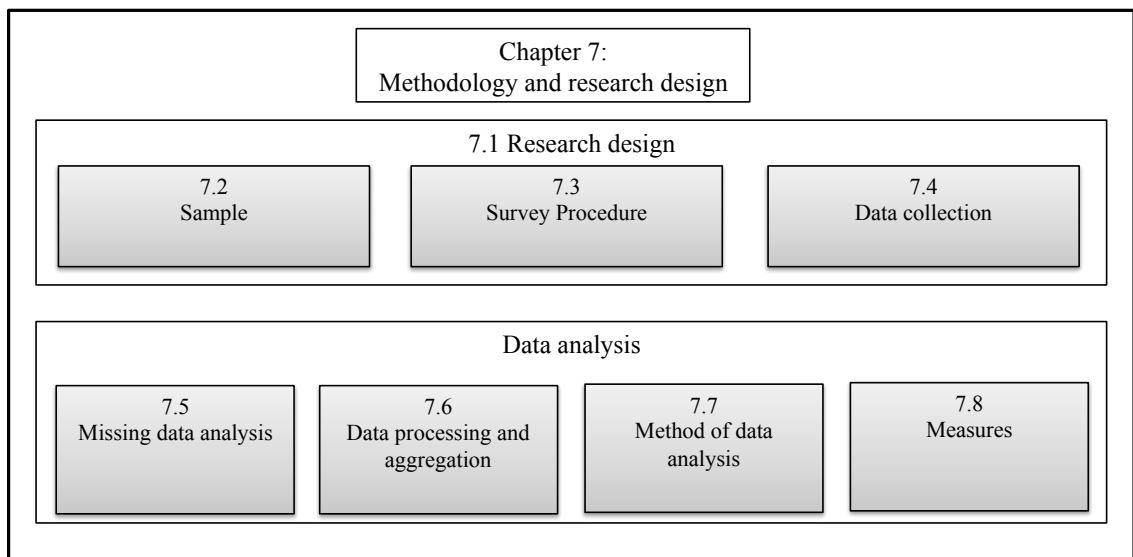
Although an empirical design of testing mediations by multiple variables (multiple mediation) has received less attention in methodological and applied literature, Preacher and Hayes (2008) strongly argue in favour of this procedure. They highlight that testing total indirect effects is analogous to conducting a regression analysis with several predictors that aims at determining whether singular or overall effects exist. The simultaneous testing of multiple indirect effects allows determining whether and which of j possibly mediating variables influences the direct effect of exogenous on endogenous variables. Furthermore, multiple mediation allows determining to what extent specific mediating variables influence a direct effect conditional on the presence of other mediators in the model (p.881). In addition, when multiple possible mediators are included, Preacher and Hayes argue that the likelihood of parameter bias due to omitted variables is reduced. A fourth and final advantage of multiple mediation models described by Preacher and Hayes is that including several mediators in one model allows determining the relative magnitude of each indirect effect in comparison with all other mediators. The researcher can then prioritize simultaneous and sometimes opposite indirect effects and test competing theories against each other (p.881).

A downside of testing multiple direct and indirect effects in the same model is that the theoretical and empirical models become highly complex. This complexity requires sophisticated methods of data analysis. The next chapter deals with methodological considerations of the empirical approach, introduces structural equation modeling techniques and describes the motives for the specific technique of PLS, which has been chosen for data analysis in the present thesis.

7. Methodology and Research Design

Diversity, and cultural diversity in particular, can be studied from different research traditions that imply a variety of underlying theoretical perspectives and the use of different methodological approaches. The choice of a specific method is the step in the research process between defining the research goals and starting field work (Buchanan & Bryman, 2007). Buchanan and Bryman (2007) argue that the choice of an adequate methodology is influenced by research aims, norms of practice, and epistemological concerns as well as by a combination of organizational, historical, political, ethical, evidential, and personally significant characteristics. Since these influences are naturally occurring and unavoidable, researchers need to consider them when choosing a specific method. This sections deals with arguments, motives and considerations about the choice of a specific method used in this research. Furthermore, the present chapter describes the research design and method of data processing and analysis. The outline of the seventh chapter is shown in Figure 34.

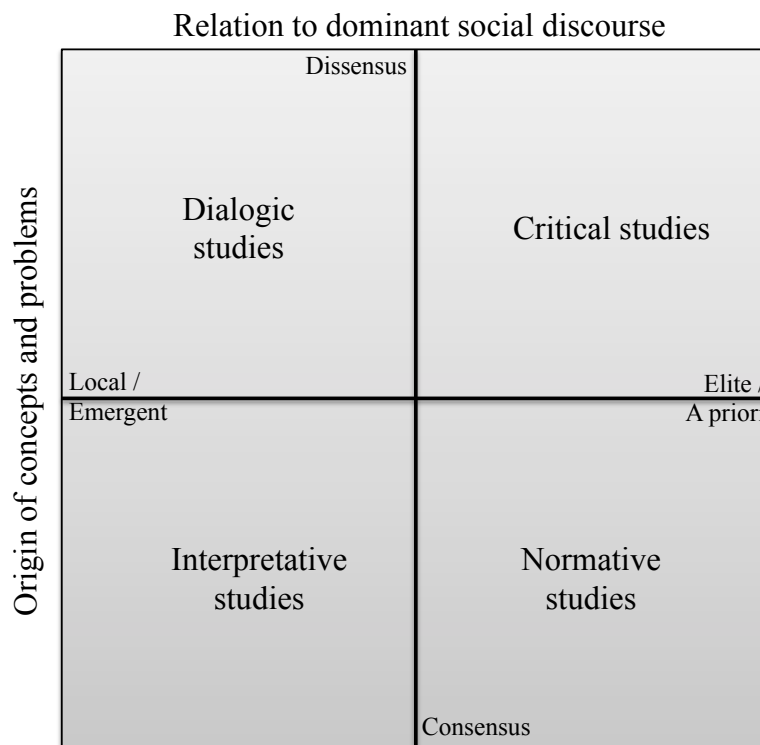
Figure 34: Outline and contents of the seventh chapter



7.1 Research Design

Alvesson and Deetz (2000) use “relation to dominant social discourse” and “origin of concepts and problems” as dimensions to contrast different research traditions. The “relation to dominant social discourse” differentiates between consensus-seeking and dissensus-seeking by the extent to which a tradition works or disrupts with a dominant set of knowledge structures, social relations, and identities. The “origin of concepts and problems” differentiates between local/emergent and elite/a priori conceptions. Local/emergent conceptions are developed together with organizational members, whereas elite/a priori conceptions are established by the researcher based on theoretical considerations and applied to organizational members being studied (Buchanan & Bryman, 2007; Deetz, 1996). This matrix allows the integration of dialogic studies, critical studies, normative studies, and interpretative studies as different research traditions (see Figure 35).

Figure 35: Contrasting research traditions (Deetz, 1996)



Diversity research has been conducted from each of these perspectives. Each of these research perspectives will be briefly introduced, with the following paragraphs explaining how diversity has been studied across the various traditions.

Normative studies fall into a positivist tradition (Alvesson & Deetz, 2000) that assumes progressive enlightenment, rationalization and control (Buchanan & Bryman, 2007). In this

tradition, researchers collect codified data by using survey methods in order to establish covariation and causal relations by testing hypotheses (Omanovic, 2011). In a positivist perspective, diversity is seen as the distribution of certain demographic or deep-level organizational characteristics (Omanovic, 2011). This perspective can also be described as “managerialist” (Omanovic, 2011, p.321) because of the underlying goal to create knowledge about the effects of diversity to assist management in improving organizational performance. Positivist diversity researchers relate diversity to individual, group, and organizational outcomes (e.g., motivation, conflict, and group or organizational performance). Omanovic (2011) concludes that this research perspective understands diversity as a resource for organizational and financial success, as an “objective phenomenon” that needs to be managed.

Interpretative studies fall into a constructivist tradition, where organizations – rather than having an economic emphasis - are seen as social sites and communities (Alvesson & Deetz, 2000). Individuals within this community are not seen as objects, but as active sense-making individuals and engaged participants, as co-creators of social structures (Alvesson & Deetz, 2000; Buchanan & Bryman, 2007). This research tradition aims at establishing and understanding meanings grounded in social and organizational practices (Buchanan & Bryman, 2007). Researchers use ethnography, phenomenology, or hermeneutics as the principal means of study (Deetz, 1996). In order to create a complete understanding of a (social) phenomenon, researchers usually conduct fieldwork with techniques of observation and (in-depth) interviewing (Buchanan & Bryman, 2007; Deetz, 1996). In an interpretative perspective, diversity is considered as socially constructed between members of an organization through words, symbols, relationships, and behaviours between members (Omanovic, 2011). Interpretative diversity research aims at understanding the opinions about and meanings of diversity from the workforce and the management. It is also about understanding the impact of diversity and diversity management, e.g. the motives and processes behind diversity initiatives in organizations. In this way, interpretative studies generate insights for understanding the complexity of diversity and its construction and management across different contexts (Omanovic, 2011).

Dialogic or postmodern studies strongly focus on the constructed and polyvocal nature of social reality (Buchanan & Bryman, 2007; Deetz, 1996). Since social reality is seen as constructed, researchers emphasize the role of language as a system of distinctions necessary to construct reality (Deetz, 1996). Organizations are perceived as complex, without shared meaning and a coherent reality (Buchanan & Bryman, 2007; Deetz, 1996). The dialogic discourse aims at revealing the pervasive and fluid nature of the contemporary society

(Buchanan & Bryman, 2007) as well as the partiality and incompleteness of reality (Deetz, 1996). Researchers in this perspective analyse the use of language in documents, practices or in conversations between members of an organization. In a dialogic or postmodern perspective, diversity is perceived as fluid and socially-constructed (Omanovic, 2011). Dialogic diversity research aims at analysing the socially constructed knowledge about diversity (e.g., in management textbooks) that may favour certain aspects of and interests in diversity (Omanovic, 2011).

Critical discourse studies focuses on power differences and domination where organizations are seen as sites of political struggle (Buchanan & Bryman, 2007; Deetz, 1996). Critical discourse researchers aim at revealing domination and asymmetries of power and communication that favour certain interests by obscuring and hindering alternative constructions of reality (Deetz, 1996). By shedding light on social practices, institutional structures, and distorted communications that create or sustain modes of domination (Buchanan & Bryman, 2007), critical discourse researchers try to enlighten people to understand, express, and act in their own interests (Deetz, 1996). Thus, the research purpose in this perspective is to resolve conflicts and power differences with fairness and justice (Deetz, 1996). Organizations are perceived as parts of the social world that are fluid and constantly change depending on the interests and ideas of people in power (Omanovic, 2011). Diversity in a critical discourse perspective is considered as a dialectic, social-historical process that is actively constructed in different contexts and by different parties (Omanovic, 2011). Diversity research aims at analysing processes how diversity ideas and interests are created and maintained in different organizational, social, and historical contexts. Furthermore, critical discourse researchers have the objective to challenge dominant diversity ideas and interests and proposing choices between various alternatives (Omanovic, 2011).

Buchanan and Bryman (2007) advise researchers to be aware of historical properties of their research. Past experiences, frameworks, conceptualizations, and findings should be allowed to influence current choices of research focus and appropriate methods. As discussed in the fifth chapter, prior cultural diversity research has predominantly used quantitative and normative research approaches. Building on that work and the underlying theories, the inconsistency of previous findings – as shown in the earlier chapter – calls for further research to clarify effects of cultural diversity in teams.

In the same vein, Edmondson and McManus (2007) call for a “methodological fit” in management research. In their article, they differentiate between three archetypes of methodological fit depending on the state of prior theory and research. Methodological fit

describes the internal consistency among research question, prior work, research design and the (intended) contribution to literature. The authors differentiate between nascent, intermediate, and mature states of prior theory. Nascent theory aims at giving “*tentative answers to novel questions of how and why*” (p.1158) and analysing connections between (often new) phenomena. On the other side of the continuum, mature theory includes a body of well-developed work and cumulative knowledge that works with sophisticated models, constructs, and measurements. In between those extremes, intermediate theory builds on existing theoretical models, but introduces new and provisional explanations of phenomena by including novel constructs into the existing knowledge.

Mature theory calls for research that aims at further refining, elaborating, clarifying specific aspects in the growing body of interrelated theories (Edmondson & McManus, 2007). The interrelation of different theories and views on cultural diversity is exactly the focus of this research. Thereby, this research builds on and aims at clarifying some inconsistencies of previous findings in cultural diversity research. Using mature theoretical explanations of the effects of cultural diversity in teams (see Chapter 5), this research tries to integrate different perspectives and theories and to examine their interrelated effects to “*provide new support for or against previous work*” (Edmondson & McManus, 2007, p.1159). Inconsistency of prior findings as a reason for initiating further empirical work – one main reason for the present research – is an example for research in an area of mature theory (Edmondson & McManus, 2007).

In a mature environment, methodological fit calls for quantitative data that typically relies on existing constructs and measures to test hypotheses with statistical methods (Edmondson & McManus, 2007). Or, in the framework by Alvesson and Deetz (2000), this research works with and builds on established theories that have been discussed in previous chapters of this thesis. Hence, the relation to the dominant social discourse can be described as “consensus-seeking”. As the origins of concepts and problems stem from the inconsistencies in previous research, the researcher determines them in an “*elite or a priori*” way based on theoretical considerations.

Not only the concerns for methodological fit suggest a normative approach in this research, but also the research aims and epistemological concerns. From a managerial perspective, team designers and leaders need to know which effects a cultural diverse team composition has, especially when aiming at creating an innovative environment. Therefore, this research takes on a managerial perspective and considers cultural diversity as an objective phenomenon that can be managed. The normative approach brings about the necessity to grasp the phenomenon of cultural also by normative and measureable concepts.

The roots of cultural research go back to the field of anthropology and archaeology, and since then, culture has been studied from a wide range of different disciplines (e.g., sociology, psychology, and management science). Taras et al. (2009) point out that these sciences have emphasized the external layers of culture. By using mainly qualitative research methodologies, cultural elements, such as artifacts, language, and traditions were interpreted and understood. Such directly observable elements of culture have been recognized as important aspects of culture, but Taras et al. (2009) point out that qualitative methodologies have limited the use of this research in contemporary and quantitatively-oriented scholarly journals. With the breakthrough success of Hofstede's "Culture's consequences" (1980), values and quantitative methods have become the focal point in cross-cultural literature (Taras et al., 2009). From this perspective, culture needs to be seen as an empirically validated, universal (or often etic) pattern that regardless of social differentiation, displays homogeneity, is broadly shared and has the power to shape identities and attitudes of people (Vinken et al., 2004).

Despite the prevalence of value research with quantitative methodologies, it remains controversial whether culture or values can be grasped by discrete variables. Ratner (1997) outlines that such variables are simple, separate entities with uniform features to be observed and quantified. To be measurable, the quality of a variable needs to be invariant. Ratner criticizes that because cultural phenomena vary profoundly as social events change, they do not have the separate, independent, uniform characteristics as required to form a variable. This leads to ignoring culturally constructed origins, characteristics, and functions of phenomena. Also, the etic approach applied by most quantitative cross-cultural studies (Taras et al., 2009) leads to ignoring culture specific phenomena in quantitative, emic cross-cultural research.

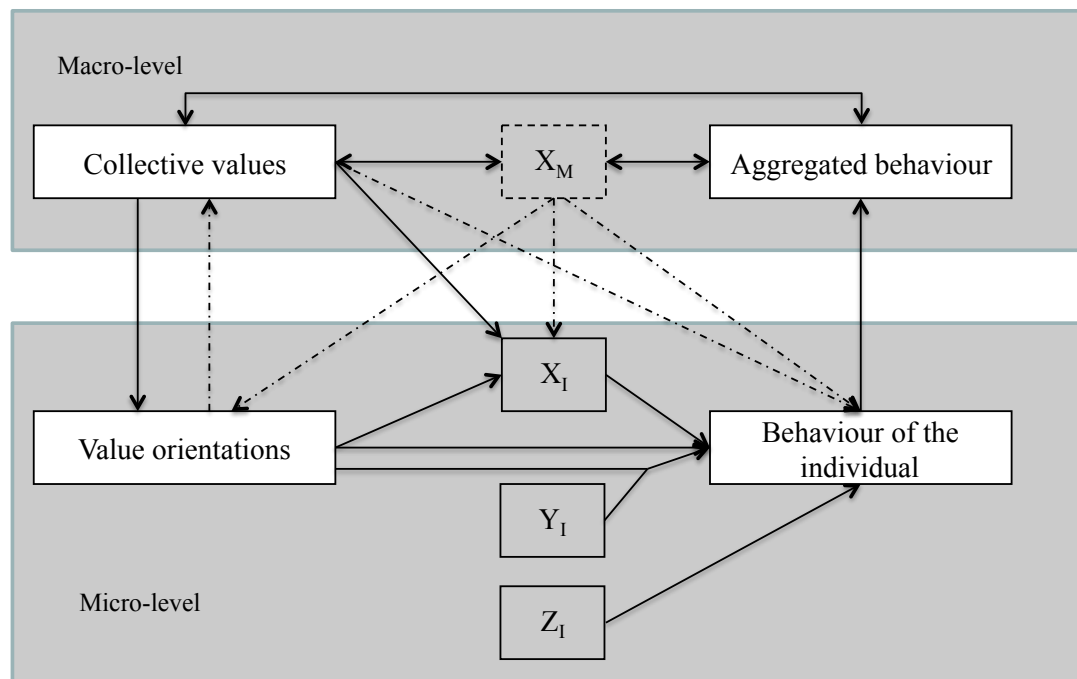
Furthermore, Ratner (1997) criticizes that quantitative methodologies with broadly formulated questions and associated answer formats lose too much information. Together with Hui (2003), he describes that abstract and atomistic variables ignore the concrete cultural quality that factors have when they are integrated within a social system. The abstract concept of values is considered as empty, and Hofstede's (1980) dimensions are unable to capture the rich cultural content of social factors (Ratner & Hui, 2003). For instance, collectivism was defined as people emphasizing the interdependence of humans and social groups, as well as the priority of social over individualistic goals. Because collectivism is conceptualized as an abstract, universal, and simplistic variable, it is dissociated from all meaning (Ratner & Hui, 2003). The authors argue that collectivism can be democratic and autocratic, can characterize completely different social systems, and can describe disingenuous behavior, or a detested obligation.

While all research traditions have their merits, the present research approaches culture and diversity from a normative perspective with associated quantitative procedures. In this view, values become their meaning by guiding underlying and often subconscious cognitive procedures that influence perception and behaviour.

Values are conceptualized as dispositions, preferences and orientations of individuals, that interact with culture and cultural values, which are mostly considered as socially shared, collective phenomena (Jagodzinski, 2004). This conceptualization has two consequences for research. First, scholars have to differentiate between micro- and macro-level cultural values and value orientations. Macro-level values are collective values or cultural values that are seen as largely stable (McSweeney, 2009). Micro-level (or individual-level) values are referred to as value orientations, and can be dynamic and context specific (McSweeney, 2009; Oyserman & Lee, 2007).

The second consequence is that value orientations belong to the inner system of an individual and are not directly observable, but latent. However, because of their function to directly influence behaviour in social situations (Kluckhohn & Strodtbeck, 1961), they can be inferred from observable behaviour (Jagodzinski, 2004). The relationships between cultural values, value orientations, and behaviour are depicted in Figure 36.

Figure 36: Interactions between cultural values, value orientations, and human behaviour (adapted from Jagodzinski, 2004)



Note: X_M stands for an infinite number of macro-level variables (e.g., economic and technical development), X_I are an infinite number of micro-level variables (e.g., specific attitudes and perceptions), Y_I are an infinite number of environmental factors that interact with value orientations, and Z_I are completely exogenous variables that directly influence behaviour.

The model by Jagodzinski (2004) illustrates some important aspects for the present research. First, it emphasises how individual value orientations and collective values influence individual and collective behaviour as dependent variables. Furthermore, the model assumes an unlikely direct effect from collective values on individual behaviour (marked by a dotted line). Rather, collective values influence individual value orientations from an enculturation or acculturation process. In this regard, they have an indirect effect on individual behaviour through the influence on value orientations and by determining perceived cultural norms (X_I). Value orientations can interact with other, situational variables (Y_I), or directly and indirectly (through specific attitudes and perceptions X_I) affect behaviour. Individual behaviour then can be aggregated to collective behaviour at different levels.

While this perspective may be criticised as simplistic, because researchers necessarily need to ignore complex interactions with specific macro- and micro-contexts, the advantage is that it studies how collective cultural values influence individual value orientations that determine individual behaviour in workgroups. Because these individualistic behaviours are aggregated at the group-level, individual value orientations can be studied as antecedents to behaviour of team members and of team-level processes – as intended in the present research. The next section describes the sample used for this endeavor.

7.2 Sample

This research investigates the role of cultural diversity in creative and innovative teams. To test the hypotheses, 436 students from Entrepreneurship education modules participated in the study. These students were studying in four internationally-oriented universities in Europe.

Student samples are commonly used in social science research. Sherman et al. (1999) report a „predominant use of undergraduate students“ (p.181) in 20 years of research until 1998. From reviewing publications in the *Journal of Personality and Social Psychology* and the *Personality and Social Psychology Bulletin* they found that above 63% of published studies used student samples. A more recent review of research on cross-cultural organizational behaviour by Tsui et al. (2007) reported that almost 39% of studies that use culture as an independent variable work with student samples. In the context of cultural psychology, Cohen (2007) refers to numbers reporting about 80% of studies using student samples.

Student samples are often described as “*convenient and readily accessible*” (Bello et al., 2009, p.361). Many researchers discourage from or even object to using student samples as surrogates for broader entities or business practitioners. For instance, Peterson (2001) claims that students are not representative for a business practitioner population. He found a greater homogeneity of student samples, different effect sizes and even directionality of effects than with non-student samples. Hence, Peterson (2001) cautions that findings may not be extended from student samples to nonstudent populations without replication among practitioners. Hence, key concern is the generalizability and external validity of research findings (Bello et al., 2009).

On the other hand, when comparing student samples with national samples in cross-cultural research, Flere and Lavric (2008) conclude that variations of student samples may be taken as indicative of variations between general population samples with regard to various sociological and psychological measures. This can be explained because culture is such a basic and fundamental aspect of human nature. Bello et al. (2009) also differentiate between “fundamental” and “proximate” research topics. In fundamental research topics, processes, causes and effects reside in the basic characteristics of human nature. Hence, they are considered as relatively independent of context and life experiences. Bello et al. (2009) explicitly use communication in multicultural teams (p.362) and cultural diversity research (p.363) as examples for fundamental research topics where the exploration with student samples makes sense. Furthermore, student samples are considered as appropriate when the study is guided by well-defined theories with sophisticated predictions that are either empirically confirmed or conform to previously obtained findings among non-student samples (p.363). In contrast, “proximate” research highly depends on the specific context instead of fundamental aspects of human nature, where the use of student samples is considered as illegitimate.

This research analyses the role of cultural diversity in teams; an issue that can be considered as fundamental, and the above presented and well-established theories put forward that processes, causes and effects of cultural diversity in teams are mainly based on the characteristic of human nature. Where results contradict well-established theories and previous findings, they need to be interpreted with caution with regard to their external validity for the general population of business practitioners.

As will be described below in Chapter 7.4.3, participating students developed business plans to introduce innovative business ideas into the market. University students can be considered as an appropriate sample because they represent an important group of potential

entrepreneurs in developed and developing countries (Kelley et al., 2011; Thomas & Mueller, 2000). Moreover, it has been empirically shown that university students more readily identify business opportunities, venture more often, and are more successful in doing so (Gundry & Welsch, 2001; Ucbasaran et al., 2007).

The sample is composed of 79% undergraduate students ($n = 343$), 20% graduate students ($n = 85$), and the remaining were either postgraduate students ($n = 4$) or did not reveal their status ($n = 4$). Participants aged between 19 and 57; the mean age was 23.28 (s.d. = 3.32 years). Participants had a mean previous work experience of 2.82 years (s.d. = 3.41 years). Hence, the participants in the sample can be described as very mature.

Most participants were German (42.43%; $n = 185$) and Irish nationals (39.45%; $n = 172$). Five percent were French ($n = 22$), and the remaining thirteen percent ($n = 57$) had double citizenship ($n = 8$), did not reveal their nationality ($n = 4$), or were nationals from other 28 countries ($n=45$). Double citizenships were from Great Britain and Ireland ($n = 1$), Ireland and Spain ($n = 1$), France and Canada ($n = 1$), Ireland and Canada ($n = 1$), Germany and Russia ($n = 3$), as well as Germany and Croatia ($n = 1$). Table 6 gives an overview of the participants' nationalities.

Table 6: Overview of participants' origin

Nationality	Number of participants	Percentage
Germany	185	42.4
Ireland	172	39.5
France	22	5.1
Spain	4	.9
USA	3	.7
Great Britain	3	.7
China	3	.7
Russia	3	.7
Bulgaria	3	.7
Canada	2	.5
Bolivia	2	.5
Croatia	2	.5
Czech Republic	2	.5
Greece	1	.2
Slovakia	1	.2
Korea	1	.2
Bosnia	1	.2
Columbia	1	.2
Mexico	1	.2
Turkey	1	.2
Switzerland	1	.2
Rumania	1	.2
Iraq	1	.2
Malaysia	1	.2
Turkmenistan	1	.2
Denmark	1	.2
Ukraine	1	.2
Uzbekistan	1	.2
Serbia	1	.2
Belarus	1	.2
Costa Rica	1	.2
Double Citizenship	8	1.8
n.a.	4	.9
Total	436	100%

Participants grew up in a wide range of different countries. Most participants obviously grew up in Germany ($n = 174$), Ireland ($n = 165$), and France ($n = 16$). The remaining participants grew up in 27 other countries ($n = 33$), in multiple countries ($n = 33$), or did not reveal where they spent their childhood ($n = 15$). Of those participants who grew up in multiple countries, most ($n = 25$) grew up in two countries, the remaining ($n = 8$) in up to seven countries.

7.3 Survey Procedure

The students participated in Entrepreneurship education and innovation management modules. They formed a total of 105 teams consisting of between 3 and 5 team members (mean = 3.7 members; s.d. = 0.8). These team sizes were chosen because team research has shown that teams are most effective when they have sufficient, but not too many members (West & Anderson, 1996). With increasing group size the possible contribution by each member decreases (Gebert, 2004) lowering each member's opportunity to express ideas and thoughts. Rentsch and Klimoski (2001) have shown that team size is negatively related to schema agreement thus increasing possible process losses in larger groups. For these reasons, team sizes that exceed six members are commonly seen as too large (Gebert, 2004).

The team project lasted 16 weeks of the semester and included generating a business idea and developing a complete business plan to introduce the idea into the market. The team task, where student teams work on business innovation topics and prepare a business plan, is similar to what has been practiced by Polzer et al. (2006). In line with previous research (e.g., Chatman et al., 1998; Lau & Murnighan, 2005), the lecturers determined the assignment of participants to teams typically randomly, but students were able to make suggestions at the beginning of the semester (Harrison et al., 2002).

7.4 Data Collection

7.4.1 Development of the questionnaire

Team members individually completed a survey questionnaire at the end of the semester to assess team processes and team members' individual cultural value orientations. To avoid methodological problems from misunderstandings of items (e.g., due to subtle meanings of items) in the questionnaires and to ensure construct validity across languages and cultures, the questionnaires were translated into German, French, and Spanish using the back-translation method (Brislin, 1970). The back-translation method is the most commonly used method in cross-cultural research (e.g., Kearney & Gebert, 2009). For the English into German translation, the author of this thesis translated the items from the source to the target language himself. The other two translations from source to target were conducted by bilinguals as recommended by Brislin (1970, p.186). Certified translators (also bilinguals) then translated the questionnaires back from the target language to the source language. Disposing of the original items and the back-translations, the author was able to assess where differences of meaning occurred. Those items with differences in meaning were again

translated from source to target by the bilingual translators in a second round. After a second back-translation and a check-up for consistency in meaning, the author conferred the remaining issues with both translators to jointly solve them. The four languages (English, German, Spanish and French) account for the first languages of 374 students (approx. 86 % of the sample).

The complete questionnaire and the translated versions can be found in Appendices 3 to 6.

7.4.2 Creativity task

To assess team creativity, teams were asked at the end of the term and their team cooperation to do a divergent thinking task, which is the most promising approach to assess differences in creative abilities (Silvia et al., 2008). In this task, teams were asked to generate ideas about possible ways to use a brick (Guilford, 1950).

The “brick-test” is a commonly used test of divergent thinking, and for creativity assessment (Baas et al., 2008) and has been used to assess group-level creativity by Tadmor et al. (2012). The brick-test was applied in this research because it is commonly used and established in creativity research (Baas et al., 2008). Furthermore, in the context of cultural experiences and their influences on creativity, the brick test has been applied by Tadmor et al. (2012) at the group-level. Using the same task in this research aims at making the results obtained here comparable to findings from previous studies.

7.4.3 Business plan administration

The importance of writing a business plan and the business plan as a management tool for innovative ventures has been described above (see Section 3.3). Therefore, the business plans were used to assess the innovative performance of a team. The exact measure is outlined beneath.

The sample consists of teams that developed business plans to found a new venture as well as of teams with fictitious business ideas (i.e. business ideas developed in the course of the Entrepreneurship module to simulate a business start-up). Many teams participated in a business plan competition to win funding to realize their ideas. In order to allow a maximum amount of realism for the teams, industry experts evaluated the business plans. The assessment of business plans for their quality and the innovativeness of the business idea is best done by multiple expert ratings (West & Andersson, 1996), since objective measurements for innovativeness are impossible to find (Amabile, 1983). These subjective criteria are validated by consensus of industry experts, as practiced by Franke et al. (2006b), Borrill et al. (2000) and West and Andersson (1996).

The evaluation team for this research consisted of professionals who regularly deal with business plans and investment decisions: A first evaluator is an analyst and start-up consultant from the chamber of commerce (IHK Reutlingen) who is project manager for a regional innovation and start-up project that aims at increasing promising company foundations out of universities. A second evaluator stems from a federal-owned bank (Landeskreditbank Baden-Württemberg) that offers guarantees and credits to innovative business start-ups and SMEs. Furthermore, two analysts from Mountain Partners AG, a Swiss Venture Capital Fund, evaluated business plans. The team also included the executive director of the Venture Capital Fund of a regional bank (Kreissparkasse Wagniskapitalgesellschaft). To prevent a local bias that might have occurred when Irish business plans are evaluated by German experts, all Irish business plans were also evaluated by the manager of an innovation agency at a large university in Dublin. This person has extensive practical experience in creating and incubating innovations, and lectures innovation management.

Each business plan was separately and independently evaluated by at least two evaluators. The next subchapters describes the methodology how the individual ratings from the independent evaluators were treated before forming a team-level output variable.

7.5 Missing data analysis

The questionnaires assessing team-level variables and individual cultural value orientations were administered during the courses. Students that were not present during the courses (incomplete teams) were traced afterwards to obtain a maximum of complete team-level datasets. Because missing data can cause problems due to decrease of statistical power (Roth, 1994), the data set was tested for missing data (Missing Value Analysis, MVA) in SPSS 19 (IBM, 2010) (see Appendix 7). The analysis shows that the maximum amount of missing values in the data was 2.3% for the item PH3. The MCAR test by Little revealed that data was missing completely at random ($\chi^2 = 9299.97$; $df = 9280$, significance = .44). Roth (1994) states that any missing data treatment is acceptable in this situation, and Newman (2009) suggests mean item imputation. This procedure was followed, as it is more accurate than listwise deletion, and as accurate as pairwise deletion (Roth, 1994).

7.6 Data processing and aggregation

Data on team process variables was collected at the individual-level in the questionnaires. To test the model at team-level, data needed to be aggregated from individual-level to team level. In multi-level research, it is mandatory to verify the legitimacy of the aggregation, before averaging individual values to group values (e.g., Florin et al., 1990). The underlying assumption is that asking several team members independently for their individual rating of a team-level variable reflects the shared reality within a team. This shared reality should be found in that ratings from team members are similar to one another (e.g., van der Vegt & Bunderson, 2005). The similarity, and henceforth the legitimacy, is commonly tested by combining interrater agreement and interrater reliability indices (LeBreton & Senter, 2008). The agreement is commonly assessed with the r_{wg} (James et al., 1993; 1984) and the interrater reliability usually with the intra-class correlation coefficient (ICC). Both are widely established in teamwork and diversity literature (e.g., Edmondson & McManus, 2007; Bezrukova et al., 2009).

The ICC(1) provides an estimate of the proportion of the total variance that is explained by team membership (Bliese, 2000). It is computed as:

$$ICC(1) = \frac{MSB - MSW}{MSB + ((k - 1) * MSW)}$$

where MSB is the between-group mean square, MSW is the within-group mean square, and k is the group size (Bliese, 2000).

The ICC(2) provides an estimate of the reliability of the group means. It is computed as

$$ICC(2) = \frac{MSB - MSW}{MSB}$$

where similarly, MSB is the between-group mean square, and MSW is the within-group mean square (Bliese, 2000).

ICC(1) values for team communication, task conflict and task reflexivity were, respectively, 0.35, 0.27, and 0.23, all statistically significant at $p < 0.001$. This suggests that between 23% and 35% of the total variance can be explained by team membership. ICC(2) values were, respectively, 0.68, 0.59, and 0.55. These ICC values can be considered as low, but sufficient to justify aggregation at team level (LeBreton & Senter, 2008).

The r_{wg} (or more precisely $r_{wg(j)}$ for variables with multiple items) is computed as

$$r_{wg(j)} = \frac{J \left[1 - (\overline{s_{XJ}^2} / \sigma_{EU}^2) \right]}{J \left[1 - (\overline{s_{XJ}^2} / \sigma_{EU}^2) \right] + (\overline{s_{XJ}^2} / \sigma_{EU}^2)};$$

where $r_{wg(j)}$ is the within-group interrater reliability based on J items, $\overline{s_{xj}^2}$ is the mean of the observed variances on the J items, and σ_{EU}^2 is the expected error variance based on a uniform distribution (James et al., 1984). George (1990) established from personal communication with James that an r_{wg} above .70 indicates a “good” agreement between team members.

Testing whether the aggregation to team-level is legitimate was only conducted for team process variables, but not for the exogenous variables of cultural diversity. Whereas the r_{wg} (and hence the aggregation across levels) concentrates on within-team homogeneity in the representation of constructs, team cultural diversity actually focuses on the heterogeneity of attributes between members of a workgroup (see definition of diversity in Chapter 4.1). Therefore, individual value orientations were aggregated at team-level using specific diversity measures. The procedure is outlined below.

Data on team process variables was aggregated from individual-level to team level for empirical testing. Table 7 gives an overview of interrater reliabilities for the team-level constructs of communication, (process, relationship, and task) conflict, and reflexivity.

Table 7: Overview of interrater reliabilities for team-level constructs

Construct	Amount of teams (n)	Average r_{wg}	Amount of teams with $r_{wg} < .70$
Team communication	105	.67	50
Task conflict	105	.75	26
Task reflexivity	105	.88	8

Klein and Kozlowski (2000) describe two alternatives to deal with team-level disagreements. Either the researcher excludes teams with rwg_j lower than the 0.7 threshold, which would result in a significant loss of data in the present sample. Or, the researcher relies on the mean r_{wgj} for the entire sample. The latter approach is common practice, but undermines the value of assessing the rwg_j within each team (Klein & Kozlowski, 2000).

Since the elimination of those teams with rwg_j lower than 0.7 would have resulted in an undesirable and significant loss of data from the sample, a two-step approach was conducted. First, those teams that disagreed on more than six of the seven team-level constructs (i.e. more than 85% of the constructs) were eliminated, which is in total six teams. Such listwise deletion has been criticised for leading to large loss of data that may introduce bias in parameter estimations (Roth, 1994). Considering that it was only about 5% of the sample, however, deemed more appropriate than aggregating teams with more than 85 % of misspecified team-level constructs (Klein & Kozlowski, 2000).

Second, the r_{wgj} values are expected to range between 0 and 1 (1 = perfect agreement), but the values may be negative or greater than 1 if the variability within a team exceeds the expected error variance (Klein & Kozlowski, 2000). The team-level values for those teams with an r_{wgj} outside of the expected range were eliminated, because the individual estimations of that construct varied more than what would have been expected by chance. This was one value for team communication, one for task conflict, and one for task reflexivity. Table 8 gives an overview of interrater reliabilities after that elimination.

Table 8: Overview of interrater reliabilities after elimination

Construct	Amount of teams (n)	Average r_{wg}	Amount of teams with $r_{wg} < .70$
Team communication	98	.69	43
Task conflict	98	.80	19
Task reflexivity	97	.87	5

As can be seen in Table 8, the mean r_{wgj} increased for all team-level variables except for team communication to above 0.7. Because team communication is with an r_{wgj} of 0.69 very close to the threshold, and since the common threshold of 0.7 was arbitrarily defined in personal communication by George (1990), it was decided not to exclude it from further analyses. This conforms to practice by e.g. Schippers et al. (2003), but implies that the results need to be interpreted with caution.

In total, ninety-four business plans could be evaluated by two or more independent evaluators which were also analysed for the homogeneity in their assessments. Again, the r_{wgj} was also used to assess the interrater reliability between evaluators of business plans. Similar approaches have been used e.g. by Martins et al. (2011). After completing their individual evaluations, the raters discussed the ratings and tried to jointly resolve major discrepancies in their evaluations. This procedure conforms to research practice (e.g., Baer et al., 2010; Jehn, 1995). For four of the evaluated business plans, however, their opinions were too different to find an agreement. The business plans of those teams were excluded from further analyses and treated as missing data. This reduced the sample size of evaluated business plans to 90. The average r_{wgj} across all business plans and raters was very good ($r_{wg(j)}=.93$).

The missing values of the business plans and from elimination of team-level constructs may cause bias in parameter estimation that may involve e.g. lower correlation coefficients (Roth,

1994). Roth (1994) suggests using maximum likelihood methods to impute the missing data. The expectation-maximization (EM) procedure is one method to estimate missing data based on maximum likelihood that typically produces less bias in parameters than using more traditional methods (e.g., pairwise or listwise deletion) (Newman, 2009). The EM procedure first estimates missing data and then parameters using maximum likelihood estimation based on the existing data as well as missing data estimates. In following iterations, the missing data is re-estimated based on the new parameter estimates. Then, the new parameters are again estimated based on actual and re-estimated missing data until the procedure converges (Roth, 1994). In this iterative process, a new data set is produced that contains no more missing values. The EM procedure was carried out for estimating the missing data using the program NORM 2.03 (Schafer, 1999).

Changes in the item means and standard deviations were calculated to assess the extent of change from data imputation. Table 9 shows that they were extremely small.

Table 9: Means and standard deviations before and after data imputation

Construct	Original mean	Original sd	New mean	New sd	Delta Sd
Team communication	4.146	.479	4.141	.479	.001
Task conflict	2.508	.523	2.507	.521	-.003
Task reflexivity	3.446	.467	3.440	.467	.000
Innovativeness	10.586	3.039	10.588	3.099	.060
Demand	2.484	.731	2.497	.724	-.008
Turnover	2.421	.885	2.435	.883	-.002
Pursuit	2.669	.809	2.679	.796	-.013
Funding	2.487	.771	2.481	.759	-.012

7.7 Data analysis

Data analysis was carried out with a structural equation modeling (SEM) technique. The following sections introduce the rationale for this procedure and necessary quality criteria for assessing the measurement model and the structural model.

7.7.1 Data analysis with structural equation modeling technique

In the recent years, the use of SEM techniques has increased dramatically (Williams et al., 2003). There are basically two different types or families of SEM algorithms: covariance-based SEM (CBSEM), as used in LISREL (n.d.) or AMOS, and variance (or regression-

based) techniques, of which Partial Least Squares (PLS) is the most prominent representative (Henseler et al., 2009).

CBSEM aims at finding the best fit between the covariance matrix derived from the theoretical model and the empirical covariance matrix (Fassott, 2005). The advantage of CBSEM lies in its wide acceptance and application in research. For many researchers, using SEM is associated with carrying out a maximum-likelihood, covariance-based analysis (Reinartz et al., 2009). CBSEM, however, makes high demands on data requiring normally distributed, interval-scaled data sets (Fornell & Larcker, 1981) and large sample sizes (Reinartz et al., 2009).

In contrast to CBSEM, PLS estimates model parameters to maximize the variance explained for all endogenous constructs in the model through a series of ordinary least squares regressions (Reinartz et al., 2009). In other words, PLS aims at minimizing error terms of all endogenous variables (Huber et al., 2007). The PLS algorithm was developed by Wold (1985) as a mathematically rigorous soft modeling procedure (Sosik et al., 2009). Whereas CBSEM is often considered as suitable for theory testing, PLS was developed to focus more on prediction and theory development (Henseler et al., 2009). However, PLS is – similar to CBSEM – a confirmatory procedure that is only applied meaningfully when testing extensive and comprehensive theoretical considerations (Ringle, 2004). In the same vein, Fassott (2005) demands that PLS models must be developed theory-based.

Compared to CBSEM, PLS has various advantages. First, empirical results from Reinartz et al. (2009) confirm that the statistical power of PLS is larger than or equal to CBSEM, even under the condition of low information richness. PLS produces coefficients that are closer to the true values than other approaches, allowing lower variance of prediction errors and better predicting models (Sosik et al., 2009).

Small sample sizes are another strong argument for PLS path modeling since the algorithm is able to work with samples lower than 20 (Chin & Newsted, 1999) and that may even be smaller than the number of variables in the model (Fornell & Bookstein, 1982). Chin (1998a) suggests that the sample size for PLS should equal or exceed 10 times the larger of (a) the largest number of formative indicators employed to form a latent variable or (b) the largest number of structural paths leading to a latent variable. While the statistical power of CBSEM was found to be largely influenced by sample size, PLS has proven to have acceptable statistical power even with low number of observations (Reinartz et al., 2009). Hence, Reinartz et al. (2009) suggest that PLS should be used when the number of observations does not exceed 250.

With regard to distributional assumptions, CBSEM procedures with maximum-likelihood and generalized-least-square algorithms require normally distributed and interval-scaled data

sets (Fornell & Bookstein, 1982; Weiber & Mülhhaus, 2010). In empirical social science research, the distribution is often unknown or far from normal (Dijkstra, 1983). Since PLS makes no distributional assumptions (Fornell & Bookstein, 1982), it is considered as suitable when the normal distribution assumptions cannot be met, e.g., when data is skewed (Reinartz et al., 2009) or includes dichotomous elements.

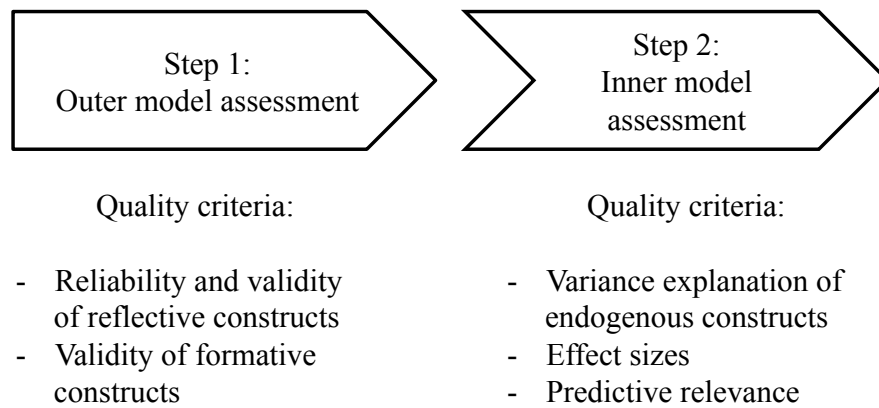
In addition, CBSEM has traditionally had difficulties working with formative measurement models, that can now be included with additional steps (MacCallum & Browne, 1993; Henseler et al., 2009). In contrast, PLS assumes that a latent variable is the weighted average of all its indicators and this approach is indifferent from the type of measurement used. That means, PLS can work with almost unlimited numbers of formative indicators (Reinartz et al., 2009).

In small group research, the high demands of CBSEM can be seen as a barrier to knowledge advancement (Sosik et al., 2009), since researchers face too high requirements for testing a thorough and deep theory (Sutton & Staw, 1995). Or, Type II errors occur when data analysis techniques miss to find a significant effect and researchers therefore wrongly fail to reject the null hypothesis (Wilcox, 1998). Under these circumstances it is not astonishing that PLS has been adopted by a growing number of researchers in various academic domains (Sosik et al., 2009) and articles using PLS have increasingly been published in leading journals (Reinartz et al., 2009). The advantages of PLS make it the technique of choice for analysing the empirical data in this research.

Even with the lowest team size possible, CBSEM would still require at least 750 individuals to attain the critical value of $n = 250$ observations. Especially under the condition that teams must have varying degrees of cultural diversity (i.e., include an international and intercultural sample) and perform creative and innovative tasks, such high sample sizes are difficult to obtain.

A downside of the PLS approach is the lack of a global goodness-of-fit criterion (Chin, 1998b; Henseler et al., 2009). The goodness-of-fit relates to the ability of the model to account for the sample covariances (Chin, 1998b). Commenting on reviewers who reject SEM research that lacks a goodness-of-fit indicator, Chin (1998b p.xiii) criticises that CBSEM may increase error terms to match data covariances, yielding excellent goodness-of-fit indicators but also poor R^2 and factor loadings. As a consequence, Chin (1998a) proposes a catalogue of criteria to assess the quality of PLS-models: PLS path models are to be assessed in a two-step process, that includes (1) the assessment of the outer model (measurement model), and then (2) the assessment of the inner model (structural model) (Henseler et al., 2009). Figure 37 depicts the process suggested by Henseler et al. (2009).

Figure 37: Process to assess a PLS path model (adapted from Henseler et al., 2009, p.298)



As can be seen in Figure 37, the assessment of the inner model makes only sense once the outer model has proved its reliability and/or validity. Furthermore, Figure 37 already indicates that different quality criteria ought to be used for reflective and formative latent variables. The next subsection deals with differences between reflective and formative operationalizations.

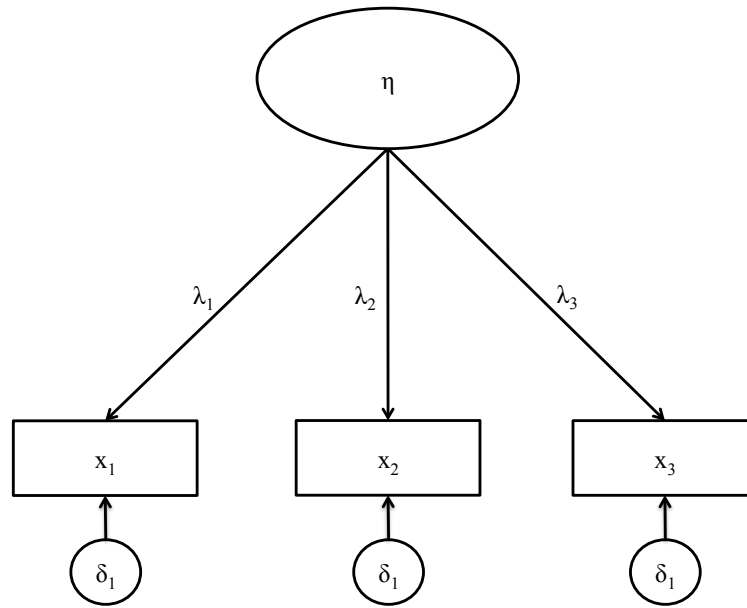
7.7.2 Reflective and formative measurement models

Latent variables can be operationalized as formative („composite latent variable“) or reflective („principle factor model“) based on the direction of causality (Jarvis et al., 2003). In reflective latent variables, covariations among items are caused by (and therefore reflect) variations in the underlying latent variable (Jarvis et al., 2003). Hence, items are dependent on the latent variable, computed as (Bollen & Lennox, 1991, p.305)

$$x_i = \lambda_i \eta + \delta_i$$

where x_i is the i th indicator, η is the latent variable that effects it, δ_i is the measurement error for the i th indicator, and λ_i is the coefficient giving the expected effect of η on x_i . A reflective measurement model can be depicted as in Figure 38.

Figure 38: Schematic diagram of a reflective measurement model (adapted from Bollen & Lennox, 1991; Jarvis et al., 2003)

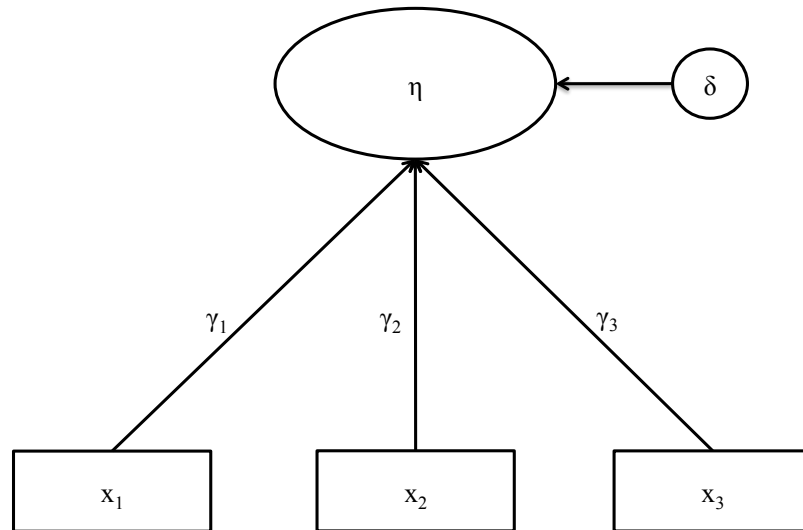


Formative latent variables are based on the notion that indicators are viewed as causing (forming) rather than caused by a latent variable (MacCallum & Browne, 1993). In this operationalization, the latent variable is dependent on the indicators that form the variable, computed as (Bollen & Lennox, 1991)

$$\eta = \gamma_1 x_1 + \gamma_2 x_2 + \dots + \gamma_n x_n + \delta$$

where γ_i is the parameter reflecting the contribution of the indicator x_i to the latent variable η , and δ is a disturbance or error term (Diamantopoulos & Winklhofer, 2001; Henseler et al., 2009). A formative measurement model can be depicted as in Figure 39.

Figure 39: Schematic diagram of a formative measurement model (adapted from Bollen and Lennox, 1991)



The decision whether to measure a construct as a formative or reflective model is often not easy and requires careful consideration. Diamantopoulos and Siguaw (2006) found that it is the prevailing convention in organization research to operationalize latent variables as reflective models. They point to the unfortunate condition that only few exceptions in organization research have specified formative measurement models. Albers and Hildebrandt (2006) name the acceptance of CBSEM techniques and their likelihood to be published in highly ranked journals, as well as the easy application of software (e.g., LISREL and AMOS) as reasons that high numbers of studies apply reflective measurement models.

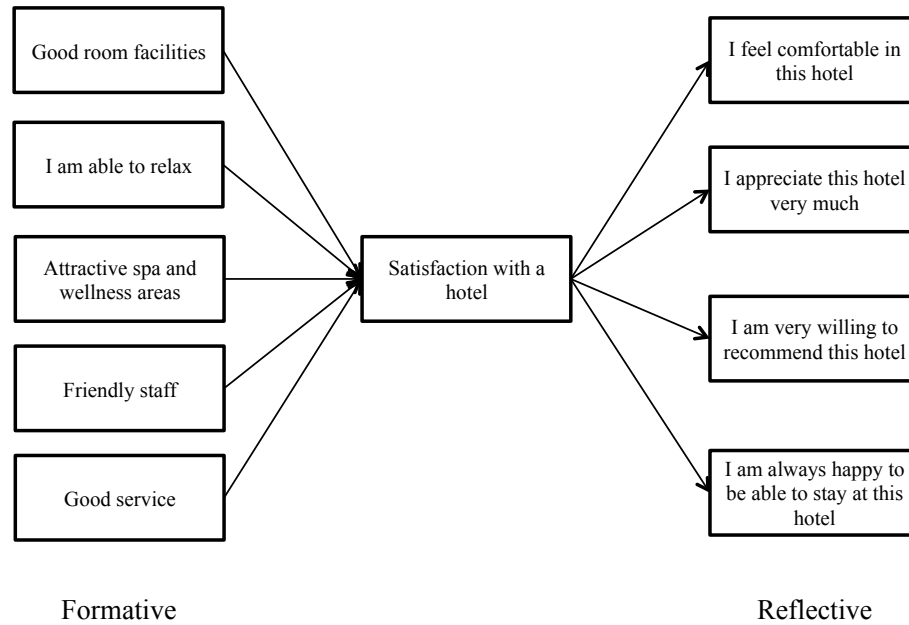
The dominance of reflective measurements often leads to a misspecification of constructs in research (e.g., Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003). As a consequence, Jarvis et al. (2003) developed a catalogue of rules to determine whether a construct is formative or reflective (see Table 10 below). Huber et al. (2007) conclude that these criteria can be reduced to the question whether a change of the construct results in a change in all indicators (reflective) or the change of one indicator results in the change of the construct value (formative).

Table 10: Decision rules whether a construct is formative or reflective (Jarvis et al., 2003, p.203)

Criterion	Formative model	Reflective model
1. Direction of causality from construct to measure implied by the conceptual definition	Direction of causality is from items to construct	Direction of causality is from construct to items
<ul style="list-style-type: none"> ▪ Are the indicators (items) <ul style="list-style-type: none"> (a) Defining characteristics or (b) manifestations of the construct? ▪ Would changes in the indicators/items cause changes in the construct or not? ▪ Would changes in the construct cause changes in the indicators? 	Indicators are defining characteristics of the construct Changes in the indicators should cause changes in the construct Changes in the construct do not cause changes in the indicators	Indicators are manifestations of the construct Changes in the indicator should not cause changes in the construct Changes in the construct do cause changes in the indicators
2. Interchangeability of the indicators/items	Indicators need not be interchangeable	Indicators should be interchangeable
<ul style="list-style-type: none"> ▪ Should the indicators have the same or similar content? Do the indicators share a common theme? ▪ Would dropping one of the indicators alter the conceptual domain of the construct? 	Indicators need similar content/indicators need not to have the same or share a common theme Dropping an indicator may alter the conceptual domain of the construct	Indicators should have the same or similar content/indicators should share a common theme Dropping an indicator should not alter the conceptual domain of the construct
3. Covariation among the indicators	Not necessary for indicators to covary with each other	Indicators are expected to covary with each other
<ul style="list-style-type: none"> ▪ Should a change in one of the indicators be associated with changes in the other indicators? 	Not necessarily	Yes
4. Nomological net of the construct indicators	Nomological net for the indicators may differ	Nomological net for the indicators should not differ
<ul style="list-style-type: none"> ▪ Are the indicators/items expected to have the same antecedents and consequences? 	Indicators are not required to have the same antecedents and consequences	Indicators are required to have the same antecedents and consequences

Many constructs can be measured either by reflective models or by formative models, as shown in the following example of satisfaction with a hotel (Figure 40, Albers & Hildebrandt, 2006).

Figure 40: Satisfaction as a reflective or formative construct (Albers & Hildebrandt, 2006, p.12)



As indicated above (Figure 37), the criteria for assessing the quality of reflective and formative latent variables differ. The next subsection deals with their respective quality criteria when evaluating the outer model in PLS.

7.7.3 Assessing the quality of reflective and formative measurement models

Reflective measurement models are to be assessed for (1) composite reliability, (2) the indicator reliability, (3) the convergence validity, and (4) the discriminant validity (Henseler et al., 2009).

The **composite reliability** (or also internal consistency reliability) is usually assessed by Cronbach's α (Cronbach, 1951). It is computed as

$$\alpha = \frac{N * \bar{r}}{1 + (N - 1) * \bar{r}}$$

where N is the number of indicators of a latent variable, and is the average correlation between all items. Cronbach's alpha can take on values between 0 and 1. Nunnally (1978, p.245) proposed that an acceptable Cronbach's alpha value depends on the intended use of the research instrument. In general, for basic research Cronbach's alpha should be at least .70 to consider a scale as reliable. In psychological research, when important decisions about individuals are made, reliability needs to be higher, preferably above .95 (Nunnally, 1978).

The **indicator reliability** denotes the reliability of each indicator by the proportion of the indicator variance that is explained by the respective latent variable (Weiber & Mülhhaus, 2010). The indicator reliability is computed as (Weiber & Mülhhaus, 2010, p.122)

$$rel(x_i) = \frac{\lambda_{ij}^2 \phi_{jj}}{\lambda_{ij}^2 \phi_{jj} + \theta_{ii}}$$

where x_i is the i th indicator, λ_{ij} is the standardized factor loading of the i th indicator, ϕ_{jj} is the empirical variance of the latent variable, and θ_{ii} is the error variance of the i th indicator. The indicator reliability should be at least by .40 (Henseler et al., 2009; Weiber & Mülhhaus, 2010). While some psychometrists recommend the elimination of items with low factor loadings and indicator reliabilities, Henseler et al. (2009) recommend only eliminating items when the indicator's reliability is low and the elimination of that item increases the latent variable's composite reliability (Cronbach's alpha). This procedure is followed in this research.

The **convergence validity** describes how well a latent variable is measured based on its indicators. Fornell and Larcker (1981) suggest the average variance explained as a measurement for convergence validity. The AVE describes the proportion of the variance of a latent variable that is explained by its indicators, and is computed as (Fornell & Larcker, 1981; Weiber & Mülhhaus, 2010)

$$AVE_j = \frac{\sum_{i=1}^{k_j} \lambda_{ij}^2}{\sum_{i=1}^{k_j} \lambda_{ij}^2 + \sum_{i=1}^{k_j} \theta_{ii}}$$

where k_j is the number of indicators of a latent variable, λ_{ij} is the loading of the i th indicator, and θ_{ii} is the error variance of the i th indicator. It is recommended that the sum of the indicators should account for at least 50 % of the variance of the latent variable, requiring

the AVE to be at or exceed .50 (Chin, 1998a; Fornell & Larcker, 1981; Henseler et al., 2009).

As a criterion of **discriminant validity**, the Fornell-Larcker criterion (Fornell & Larcker, 1981) postulates that a latent variable should share more variance with its indicators than with any other latent variable of the model (Henseler et al., 2009). Statistically, discriminant validity is given when the AVE of a latent variable is greater than the square of the correlations among the latent variables in the model (Chin, 1998a). The Fornell-Larcker criterion assesses discriminant validity at the construct-level and another test for discriminant validity is proposed to assess discriminant validity at the indicator-level (Henseler et al., 2009). The indicator-level discriminant validity is assessed by cross-loadings of indicators. All indicators should load highest with their assigned latent variables, otherwise, a researcher is advised to reconsider the appropriateness of the construct (Chin, 1998a).

In sum, a reliable and valid measurement of a reflective latent variable should meet criteria as listed in Table 11.

Table 11: Quality criteria for reflective measurement models (Henseler et al., 2009)

Criterion	Measurement for	Requirement(s)	Description
Cronbach's alpha	Composite reliability	$\geq .70$	Measure for internal consistency of a set of indicators represented by the average correlations between all indicators of a latent construct.
Indicator reliability	Indicator Reliability	$\geq .40$	Proportion of the indicator variance explained by the assigned latent variable.
AVE	Convergence validity	$\geq .50$	Describes the proportion of the variance of a latent variable that is explained by its indicators.
Fornell-Larcker Criterion	Discriminant validity	AVE > squared correlations among latent variables	A latent variable should share more variance with its indicators than with any other latent variable of the model.
Cross-loadings	Discriminant validity	See description	All indicators should load highest with their assigned latent variables.

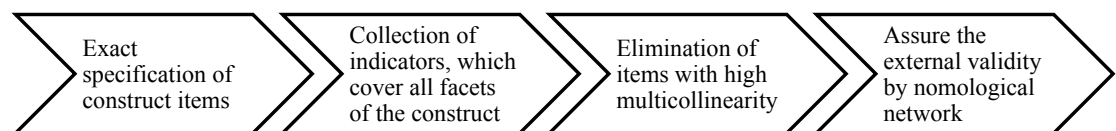
Because of the inverted causality between the construct and its indicators, formative measurement models require different approaches than reflective models to assess the quality (Henseler et al., 2009). Diamantopoulos and Winklhofer (2001, p.271) state that because of the characteristics of formative constructs, conventional procedures used to assess the validity and reliability of those scales (e.g., factor analysis and composite reliability

measures) are not appropriate. Because highly reliable and unidimensional constructs require high intercorrelations between the items (Albers & Hildebrandt, 2006), items with low correlations are usually omitted (Jarvis et al., 2003), often until only items remain that are hardly semantically distinguishable (Albers & Hildebrandt, 2006).

In contrast, formative indicators are not necessarily correlated and may even be absolutely uncorrelated (Jarvis et al., 2003). Because formative constructs are mathematically constructed as the sum of the contributions of its indicators (Bollen & Lennox, 1991), eliminating an (uncorrelated) indicator may significantly restrict the domain of the construct. Hence, the standard scale development procedure would have negative consequences in formative models by altering the empirical meaning of a composite, formative construct (Jarvis et al., 2003). Furthermore, multicollinearity constitutes a significant problem for measurement model parameter estimates in formative constructs, but they are “*a virtue when the indicators are reflective*” (Jarvis et al., 2003, p.202).

Formative measurement models should be constructed and validated in a four step process (Diamantopoulos & Winklhofer, 2001; Henseler et al., 2009; Huber et al., 2007) depicted in Figure 41.

Figure 41: Process to construct and validate a formative measurement model (adapted from Diamantopoulos & Winklhofer, 2001; Huber et al., 2007)



The first step in the process is to specify the content of the latent variable. Diamantopoulos and Winklhofer (2001) outline that this step aims at specifying the scope of the latent variable. By identifying the facets of the constructs, all relevant indicators can be found in a second step. Here, theoretical considerations allow generating indicators that influence the formative construct (Huber et al., 2007). Diamantopoulos and Winklhofer (2001) highlight that indicator items should cover the entire scope of the latent variable as defined in the first step.

In the third step of the process, the items should be tested for multicollinearity (Diamantopoulos & Winklhofer, 2001). The authors explain that multicollinearity is a particular issue with formative indicators since they are based on multiple regressions. The stability of the indicator coefficients is therefore affected by the strength of the indicator intercorrelations and the sample size (p.272). Multicollinearity between indicators makes it difficult to identify the distinct influence of one indicator on the latent variable and renders

the assessment of indicator validity problematic (Diamantopoulos & Winklhofer, 2001). The standard errors of the beta-coefficients increase with multicollinearity and the parameter estimation becomes unreliable (Huber et al., 2007). Literature suggests several approaches to identify multicollinearity. The correlation matrix of indicators serves as a first cue to multicollinearity (Huber et al., 2007), since high correlations suggest possible multicollinearity problems. Second, the most frequently cited indicator is the variance inflation factor (VIF), computed as (Ebert & Raithel, 2009; Weiber & Mülhhaus, 2010):

$$VIF_i = \frac{1}{1 - R_i^2}$$

where R^2 is the extent to which the variance of an indicator is explained by all other indicators of the same formative variable.

It is usually suggested that a VIF above 10 indicates very high multicollinearity (Henseler et al., 2009). In that case, more than 90% of the variance of one indicator is explained by other indicators. However, several authors suggest that already VIF of above 3 indicate problematic degrees of multicollinearity (Weiber & Mülhhaus, 2010, p.207).

The VIF is the inverse to the tolerance (Ebert & Raithel, 2009), which is computed as

$$Tolerance = 1 - R^2$$

Diamantopoulos and Siguaw (2006, p.270) suggest a tolerance level of 0.30 as the cut-off criterion. Because the tolerance is the inverse to the VIF, it would imply a critical value for multicollinearity of $VIF > 3.33$.

In addition, Schloderer et al. (2009) and Ebert and Raithel (2009, p.524) suggest using the condition index (CI) as a further indicator for multicollinearity. The CI is the square root of the largest eigenvalue divided by the eigenvalue of the standardized regression coefficients between the indicators and the latent variable (Schloderer et al., 2009):

$$CI_i = \sqrt{\frac{eigenvalue_{max}}{eigenvalue_i}}$$

CI values between 10 and 30 indicate strong degrees and above 30 very strong degrees of multicollinearity (Schloderer et al., 2009).

Furthermore, even if VIF and CI do not exceed their thresholds, problematic multicollinearity may still persist and can be detected when relationships between formative indicators and their construct change directions and are theoretically questionable. When an indicator has a theoretical suppressor effect, a negative weight to the construct makes sense; otherwise it may indicate multicollinearity problems. Especially, when formative indicators are strongly and positively correlated according to the correlation matrix, it is questionable when their regression coefficients exhibit opposite, or insignificant weights to the latent variable (Weiber & Mülhhaus, 2010).

Once multicollinearity has been ruled out, it is required in the fourth step to test the formative latent variable for external validity (Diamantopoulos & Winklhofer, 2001; Henseler et al., 2009). The literature suggests different approaches for assessing the external validity. If formative and reflective measurement models for one latent variable exist, and when data is analysed by CBSEM (Huber et al., 2007) a “Multiple Indicators and Multiple Causes”-model (MIMIC) is suggested (Diamantopoulos & Winklhofer, 2001).

A further appropriate solution in PLS is a nomological approach to validate the formative measurement of a latent variable (Diamantopoulos & Winklhofer, 2001) where an index is linked to another construct with which it would be expected to be linked (e.g., an antecedent or a consequence). Diamantopoulos and Winklhofer (2001, p.273) describe that it requires gathering data for an additional construct, that this construct needs to be measured by reflective indicators, and that a theoretical relationship can be postulated to exist between both constructs. This procedure is also suggested by Huber et al. (2007).

Besides these criteria for the construction of an index of formative indicators, Henseler et al. (2009) postulate that the weights of indicators of a formative measurement model should be significant. The quality criteria for formative measurement models are listed in Table 12.

Table 12: Quality criteria for formative measurement models (Henseler et al., 2009, p.302)

Criterion	Measurement	Requirement(s) / Description	
External validity	Nomological validity	The relationship between a formative index and another reflectively measured variable should accord to theoretical expectation.	
Indicator specification	Significance of weights	The estimated weights of formative indicators of a latent variable should be significant	
Multicollinearity	VIF	< 3.33	Variables in a formative block need to be tested for multicollinearity that may harm the parameter estimations. Multicollinearity needs to be ruled out.
	Tolerance	>.30	
	Condition Index	<30; better: < 10	

7.7.4 Assessing the quality of the structural model

After the measurement model has been assessed for quality criteria, the second step for evaluating a PLS model is the assessment of the inner model (structural model) (see Figure 37 above).

A first essential criterion for assessing the structural model is the R^2 or coefficient of determination of endogenous variables in the model (Henseler et al., 2009). The interpretation of the R^2 of an endogenous variable is identical to that of traditional regression (Chin, 1998a). The R-square indicates the extent to which the variance of an endogenous variable is explained by the associated exogenous variables in the model (Weiber & Mühlhaus, 2010). Henseler et al. (2009) refer to Chin (1998a) describing R^2 values of .67, .33, and .19 as substantial, moderate and weak. This perspective is shared in many SEM textbooks (Weiber & Mühlhaus, 2010). In the area of organizational psychology, however, conventions for effect sizes differ. Researchers (Grissom, 1994, p.316; Murphy, 2004, p.127) in the area of behavioural sciences usually refer to Cohen (1988) and describe R^2 of above .01, .10, and .25 as small, moderate, and large effects.

Second, path coefficients are interpreted similar to standardized beta coefficients of normal regressions (Henseler et al., 2009). Path coefficients indicate the strength and the direction of a hypothesized influence between two latent variables (Weiber & Mühlhaus, 2010). The significance of a path coefficient needs to be tested with resampling techniques as jackknife

and bootstrapping (Tenenhaus et al., 2005). Bootstrapping is viewed as the more efficient procedure (Chin, 1998a) and is used for testing significance in this research.

Another indicator for the effect size of each effect in the structural model is the effect size f^2 (Cohen, 1988). While the R^2 indicates the extent of the variance of an endogenous variable that is explained by all exogenous variables, the effect size f^2 indicates the contribution of one latent exogenous variable to the R^2 of an endogenous variable (Weiber & Mülhhaus, 2010). The f^2 is computed as (Weiber & Mülhhaus, 2010, p.257):

$$f^2 = \frac{R_{included}^2 - R_{excluded}^2}{1 - R_{included}^2}$$

According to Cohen (1988), f^2 of above .02, .15, and .35 can be described as small, moderate and substantial impacts.

Finally, the structural model needs to be assessed according to its predictive capability (Henseler et al., 2009). The predictive capability can be measured using Stone-Gaiser's Q^2 (Gaiser, 1974; Stone, 1974). PLS ascertains the Q^2 in a blindfolding procedure that omits a part of the original data during the parameter estimations and then predicts the omitted data based on the parameters of the model. This procedure is repeated until every data point has been omitted and predicted (Chin, 1998a). Then the Stone-Gaiser criterion (Q^2) is measured based on the square of the prediction errors (Weiber & Mülhhaus, 2010)

$$Q^2 = 1 - \frac{\sum E_{\omega}}{\sum O_{\omega}}$$

where Q^2 represents the Stone-Gaiser criterion, E_{ω} is the square of the prediction errors, and O_{ω} is the square of the original (omitted) values. The blindfolding approach can only be applied to latent endogenous variables with a reflective measurement model operationalization (Henseler et al., 2009; Weiber & Mülhhaus, 2010). In order to have predictive relevance, a model needs to have a $Q^2 > 0$ (Chin, 1998a).

The criteria to assess the structural model in PLS are summarized in Table 13.

Table 13: Quality criteria for structural models (adapted from Henseler et al., 2009)

Criterion	Measurement for	Description
R^2	Effect size	Extent to which the variance of an endogenous variable is explained by exogenous variables. 0.01 represents a small, 0.10 a moderate, and 0.25 a substantial effect (Cohen, 1988; Murphy, 2004).
Path coefficients	Strength, direction and statistical significance of relationships	Statistically significant path coefficients in the hypothesized direction indicate statistical support for hypothesized relationships between two latent variables.
f^2	Effect size	Impact of an exogenous variable to the explained variance of an endogenous variable. 0.02 represents a small, 0.15 a moderate, and 0.35 a substantial impact (Cohen, 1988).
Q^2	Predictive relevance	Indicates the predictive relevance of a model using the Stone-Gaiser criterion. Q^2 above zero give evidence for a model's predictive relevance, while Q^2 below zero indicate a lack of predictive relevance.

7.8 Measures

7.8.1 Exogenous variables

Culture was measured based on individual cultural value orientations, which were assessed by the CPQ4 (Maznevski et al., 2002). The CPQ4 comprises eleven variations of four cultural dimensions (activity, relationship between people, relationship towards the environment, and nature of humans) and can be found in the questionnaire (Appendices 3-6). The items were taken from the cultural survey catalogue (Taras, 2007). The CPQ4 was used to assess culture because it is based on Kluckhohn and Strodtbeck's (1961) value orientation framework and therefore incorporates the advantages of capturing within-culture and between-culture differences, the conceptual independence of the value dimensions, and inclusion of values and practices (see Section 5.2.2). In addition, it is the only available research instrument that was specifically designed to assess cultural value dimensions at the individual level (Maznevski et al., 2002). It therefore satisfies the criteria of a multi-dimensional, individual-level research instrument for cultural values (see above) and has been validated by Maznevski et al. (2002) across different cultural clusters in Canada, Mexico, the Netherlands, Taiwan, and the United States.

In the CPQ4, participants were asked to self-report their degree agreement with each statement in the questionnaire on a response scale ranging from 1 ("I completely disagree")

to 7 (“I completely agree”). Table 14 gives an overview of means, standard deviations, alphas and number of items of the scales in the CPQ4.

Table 14: Overview of means, standard deviations, and composite reliabilities of the CPQ4

	Mean	s.d.	Cronbach's alpha	No. of items
Activity Orientation				
Being	4.34	.78	.48	7
Doing	4.45	.83	.72	10
Thinking	4.86	.78	.70	8
Relationships between people				
Collectivism	4.50	.72	.57	8
Individualism	4.60	.73	.46	7
Hierarchical	3.39	.85	.64	7
Relation to environment				
Harmony	5.24	.73	.56	7
Mastery	4.71	.71	.52	7
Subjugation	2.80	.83	.64	7
Human nature				
Good vs. evil	3.21	.89	.65	6
Changeable vs. stable	4.67	.99	.65	5

Note: n=436.

The scales from the CPQ4 are treated by creating a diversity index at the team-level. For that reason, the measurement model of the CPQ4 scales cannot be tested within the model in PLS. To control the psychometric properties of the CPQ4 with regard to the quality criteria required in the measurement model of PLS, a confirmatory factor analysis (CFA) was conducted in Smart PLS before the aggregation at the team-level, as described by Bido (2012) and Tenenhaus et al. (2005). The results of the CFA are shown in Appendices 8-12.

As proceeded by Maznevski et al. (2002), each orientation with its respective variations (e.g., all activity orientation items together) was tested separately. In line with previous experiences with the CPQ4 (Ayca et al., 2007; Nyambegera et al., 2001; Sparrow & Wu, 1998) and as also experienced by the developers of the survey instrument (Maznevski et al., 2002, p.285), some scales have shown low internal consistencies with Cronbach's alpha scores below .70 in the present research. In psychometric theory, a minimum value of .70 is often postulated for an acceptable internal consistency (Nunnally, 1978).

The issue of low internal consistencies is not limited to the cultural value orientations instrument CPQ4, but applies to most cultural research. Taras et al. (2009) reported from their meta-analysis of 508 studies using cultural survey instruments that the average reported Cronbach's alpha was .67, ranging from .41 to .82. These results are explained by Jagodzinski (2004) as due to a measurement problem of cultural values. Values need to be assessed either by rather general statements or inferred from specific attitudes or preferences.

The major disadvantage of the latter approach is that specific attitudes or preferences may be subject to situational cues that cannot be controlled for in surveys or interviews. Hence, value orientations are mainly conceptualized as broad and overarching dimensions and operationalized by a large set of heterogeneous indicators from different domains. As a consequence, factor loadings and reliability coefficients are often fairly low when these instruments are used at the individual-level (Jagodzinski, 2004). Therefore, a strict cut-off value of .70 would disqualify most cross-cultural research instruments.

Ayca et al. (2007) used scales of the CPQ4 with alphas as low as .53 in their research. Most cross-cultural researchers, however, have defined a cut-off value of .60 as acceptable (Nyambegera et al., 2001; Sparrow & Wu, 1998). Similarly, this research uses only those scales of the CPQ4 for further analyses that have shown an acceptable composite reliability of above .60.

Activity orientation. This value orientation includes three dimensions of being-orientation, thinking-orientation, and doing-orientation. Because of the low internal consistency ($\alpha = .48$), the *Being-Orientation* scale needed to be eliminated from further analyses. The decision is further backed by the extremely low convergence validity ($AVE = .19$) of the scale. *Doing-orientation* and *thinking-orientation* showed acceptable reliabilities, but fairly low factor loadings, indicator reliabilities, and AVEs. Since the low factor loadings, indicator reliabilities and consequently the low AVE was to be expected for individual-level cross-cultural research (Jagodzinski, 2004), it was decided to leave the other factors as developed and validated by Maznveski et al. (2002).

Relationship among people. This value orientation also includes three dimensions of collectivism, individualism, and hierarchical orientation. The composite reliabilities of *collectivism* ($\alpha = .57$) and *individualism* ($\alpha = .46$) were too low, similar to very low AVEs of both scales. Consequently, individualism and collectivism scales needed to be excluded from further analyses. *Hierarchical orientation* ($\alpha = .65$) could be retained for analysis, although several factor loadings, indicator reliabilities, as well as the AVE (.32) were quite low.

Relation to environment. The value orientation also includes three dimension, which are nature harmon, nature mastery, and nature subjugation. Two scales, *nature mastery* and *nature harmony*, have shown unacceptable low composite reliabilities of .56 (harmony) and .52 (mastery). Thus, both scales were eliminated from further analyses. The scale for nature subjugation could be retained ($\alpha = .64$), and its items loaded highest on their assigned latent variable, yet also showed fairly low factor loadings, indicator reliabilities, and AVE (.26).

Human nature orientation comprises the dimensions of *Good/Evil* and *Changeable/Unchangeable* (Maznevski et al., 2002). Both scales have shown acceptable composite reliabilities ($\alpha = .65$ for changeable/unchangeable, $\alpha = .65$ for good/evil). The factor loadings and indicator reliabilities were again quite low, as were the AVEs (.29 for changeable/unchangeable, .37 for good/evil). One item (NC5 - wording “It is possible for people whose basic nature is good to change and become bad”) of the *changeable/unchangeable*-scale did not reliably load on the assigned scale, but loaded higher on the good/evil-scale. Eliminating this item, however, resulted in a significant decrease in the latent variables composite reliability (from .65 to .59). Although this approach is not ideal, it was decided in line with Henseler et al. (2009, p.299) not to eliminate that item.

Although a principle component analysis and the CFA for the entire model was not interpretable when tested by Maznveski et al. (2002, p.291), a CFA of the remaining six scales of the CPQ4 was conducted in PLS to test their measurement in one model together. Results are presented in Appendix 12, and show that the composite reliabilities range between .63 and .72. The factor loadings and respective indicator reliabilities of the items in the CPQ4 are mainly low, as are the AVEs (ranging between .26 and .38).

Except for the cross-loadings of NC5 on Human Nature Changeable/Unchangeable and Good/Evil, the criterion of discriminant validity was met. Furthermore, the Fornell-Larcker criterion was also met, since the AVE of each scale exceeded the squared correlations among the latent variables in the model (see Table 15).

Table 15: Correlations between dimensions of the CPQ4 and assessment of discriminant validity

	1	2	3	4	5	6
(1) Activity Doing	0.29					
(2) Activity Thinking	0.22	0.34				
(3) Human Nature Changeable	0.02	0.00	0.31			
(4) Human Nature Good	0.05	0.01	0.09	0.38		
(5) Nature Subjugation	0.02	0.01	0.07	0.07	0.32	
(6) People Hierarchy	0.18	0.06	0.05	0.19	0.02	0.26

Note: n = 436. Bold number on the diagonal show the square root of the AVE; numbers below the diagonal represent construct correlations.

In sum, the results of the CFA show that the scales of the CPQ4 do not fully satisfy the generic criteria for analysis with PLS as outlined in Table 11 above. However, in the specific context of cross-cultural research, these results are not uncommon and were to be expected, since cultural values are inferred from quite general statements. As outlined in detail above, cross-cultural researchers need to make concessions to the reliability and convergence

validity of their scales, because cultural value orientations cannot be assessed more reliable and valid with common cross-cultural research instruments. Therefore, these six scales, which have shown acceptable values, are used for further analyses in the present research.

The elimination of the five scales from the CPQ4 is certainly not ideal as it narrows the scope of the research instrument. However, as Tsui et al. (2007) and Chen et al. (2009b) outline, much cross-cultural research only use a single scale for their analyses, e.g. individualism vs. collectivism. From this perspective and although not ideal, the usage of six dimensions from the CPQ4 can be seen as an advance.

The six scales of CPQ4 were used to create team-level diversity measures for cultural diversity in the forms of separation and variety (Harrison & Klein, 2007), as described in the following sections.

Cultural diversity in the form of separation

A team's cultural diversity as separation was measured by the mean Euclidean distance for each of the six remaining dimensions of cultural value orientations. This index was chosen because it captures best the distance effects between subgroups (Bezrukova et al., 2009). To account for different team sizes in our sample, the mean Euclidean distance that averages the Euclidean differences between all possible dyads was used (as recommended by Harrison & Klein, 2007), computed as

$$ED = \frac{\sum \sqrt{\sum (s_i - s_j)^2 / n}}{n}$$

The obtained mean Euclidean distance for the six dimensions of cultural value orientations were averaged to create an overall measure of cultural diversity in the form of separation. This procedure conforms to practices in diversity research and has been applied e.g. by Elron (1997) and Schippers et al. (2003). The overall cultural diversity in the form of separation ranged between 0.473 and 1.362 (mean = 0.898; s.d. = 0.178), where higher scores indicate a high cultural diversity within the team.

Cultural diversity in the form of variety

To arrive at an index for cultural diversity in the form of variety, Blau's (1977) inequality index for each of the six remaining dimensions of cultural value orientations was assessed. Blau's index (BI) is widely established in diversity research (Harrison & Klein, 2007) and is computed as

$$BI = 1 - \sum p_i^2$$

where p is the proportion of team members in the category i . For this purpose, the interval-scaled data from the CPQ4 needed to be downscaled into categories. As described by Lau and Murnighan in faultline theory (1998), reducing interval-scaled variables to nominal categories by grouping people is not an optimal solution, but allows a more complete specification of diversity within a group. Because the answer format of the CPQ4 uses a Likert Scale from 1 to 7, seven categories were used to downscale the interval-scaled data to categorical data (as also practiced by Burke and Dunlap, 2002). The downscaling was conducted with SPSS Version 19.0 (IBM, 2010) based on standard deviations from the mean. For that purpose, the individual-level data was transformed with cut points at mean and \pm three standard deviations into a maximum of seven categories. The obtained BIs for the six dimensions of cultural value orientations were again averaged to create an overall measure of cultural diversity in the form of variety. Overall cultural diversity in the form of variety ranged between 0.296 and 0.680 (mean = 0.530, s.d. = 0.08), and a higher score indicates greater diversity within the team.

National diversity

National diversity will be included as further measure of cultural diversity in accordance to previous practice in cultural diversity research (Earley & Mosakowski, 2000). The usage of nationality as a proxy for cultural has been criticised in this thesis (Chapter 5.4.2) because of the simplification by a categorical variable and the associated reverse ecological fallacy. To test the validity of this criticism, national diversity will be used alongside cultural diversity as an additional measurement to discern their individual, specific influences on team processes (Preacher & Hayes, 2008; Chin, 2010). Furthermore, including multiple measurements of variables in the same model allows to determine the relative magnitude of each measurement compared to other measurements (Preacher & Hayes, 2008). Therefore, if nationality was a suitable proxy for culture in diversity research, it should have similar effects (direction and effect size) as cultural value diversity within the nomological network. Since nationalities are categorical variables, national diversity can only be operationalized meaningfully in the diversity form of variety (Kearney et al., 2009). In this perspective, national diversity reflects a valuable variety in resources and experience, perspectives, and network ties (Kearney et al., 2009). However, nationality has also been conceptualized as a superordinate determinant of identity that is more salient than culture or race (Dahlin et al., 2005; Earley & Mosakowski, 2000; Hambrick et al., 1998). It can therefore be expected that

social categorizations effects are likely to emerge in nationally diverse teams. This rather suggests conceptualizing national diversity in the form of separation.

The downside is that national diversity as a categorical variable cannot be measured with the standard deviation or the mean Euclidean distance (Harrison & Klein, 2007). Therefore, for the sake of methodological appropriateness, and despite possible separating effects of national diversity, this research conceptualizes national diversity in the form of variety, as practiced in previous research (Kearney et al., 2009; Dahlin et al., 2005). Therefore, it is assumed that, if nationality was a suitable proxy for culture in diversity research, hypotheses for cultural variety would also be valid for national diversity. Hence, for clarity in argumentation and to avoid repetitions in argumentations, no additional hypotheses for national diversity are elaborated, but theoretical arguments from cultural variety are extended to national diversity.

Similar to cultural variety, Blau's Index was used to assess national diversity based on nationalities as outlined in Table 6. For team members with double citizenship, the first citizenship was used. National diversity ranged from 0 to 0.8 (mean = 0.173; sd = 0.232). Again, higher scores indicate higher national diversity in a team.

7.8.2 Group process variables

Team communication

Team communication was assessed according to Hoegl and Gemuenden (2001) by 10 items on a five-point Likert scale. It includes items for frequency, formalism, directness, openness, and perceived quality of communication between team members. In contrast to other measurements of team communication (Earley & Mosakowski, 2000; Gibson & Vermeulen, 2003), these items comprise more facets of the complex construct of communication in teams.

The assessment was conducted based on members' independent ratings, since aspects of e.g. openness of communication can hardly be assessed objectively, but predominantly depend on perceptions by team members (Gladstein, 1984).

Team communication scale was assessed according to the quality criteria as outlined in Table 11. The results are shown in Table 16.

Table 16: Quality criteria for team communication

Scale: Team communication			
Cronbach's alpha ($\geq .70$)		.84 (.81) ^b	
Indicators		Factor loading (confirmatory)	Indicator reliability ($\geq .40$)
CO1	There was frequent communication within the team.	.754***	.56
CO2 ^a	The team members communicated often in spontaneous meetings, phone conversations, etc.	.482***	.23
CO3	The team members communicated mostly directly and personally with each other.	.658***	.43
CO4 ^a	There were mediators through whom much communication was conducted. (Reverse coded)	.254**	.06
CO5	Project-relevant information was shared openly by all team members.	.699***	.49
CO6 ^a	Important information was kept away from other team members in certain situations. (Reverse coded)	.468***	.22
CO7	In our team there were conflicts regarding the openness of the information flow. (Reverse coded)	.563***	.32
CO8	The team members were happy with the timeliness in which they received information from other team members.	.734***	.54
CO9	The team members were happy with the precision of the information received from other team members.	.830***	.69
CO10	The team members were happy with the usefulness of the information received from other team members.	.745***	.56
Average Variance Extracted (AVE) ($\geq .50$) ^c :			.51

^a These indicators have been discarded from the measurement model due to low indicator reliabilities and increasing composite reliability after elimination.

^b The number in brackets indicates Cronbach's alpha before the elimination of items from the scale.

^c After elimination of items CO2, CO4, and CO6.

Note: * $p < .05$, ** $p < .01$; *** $p < .001$

Four items of the team communication scale (CO2, CO4, CO6, and CO7) had low indicator reliabilities, of which two items (CO4 and CO6) were reverse coded. This result is not uncommon, since researchers have frequently found problems with reverse coded items in scales, causing unexpected factor structures and diminished reliabilities (eg., Swain et al., 2008). Swain et al. (2008) find that misresponse (i.e. when respondents accidentally use the same side of the scale neutral point for both reverse and nonreverse coded items) frequently occurs with reversed Likert items, which then affects the entire scale.

Two reverse coded items, as well as CO2 were therefore discarded from the measurement model. This procedure involved an increase of the composite reliability and convergence validity. It was decided to keep CO7 despite the lower indicator reliability in the scale because the elimination of this indicator was associated with a decrease of Cronach's alpha. After elimination of the three items, composite reliability and convergence validity were above the defined quality criteria.

Task conflict

Task conflict was assessed along the scale adapted for team research by Jehn and Mannix (2001). This scale is widely accepted and most often used in team management research (De Dreu & Weingart, 2003).

Task conflict was measured on a five-point Likert scale and was assessed according to the quality criteria as outlined in Table 11.

As can be seen in the following Table 17 the scale met the criteria for reliability and validity.

Table 17: Quality criteria of the team task conflict scale

Scale: Team task conflict			
Cronbach's alpha ($\geq .70$)		.75	
Indicators		Factor loading (confirmatory)	Indicator reliability ($\geq .40$)
TC1	How much conflict of ideas was there in your work group?	.752***	.57
TC2	How frequently did you have disagreements within your work group about the task of the project you are working on?	.842***	.71
TC3	How often did people in your work group have conflicting opinions about the project you are working on?	.835***	.70
Average Variance Extracted (AVE) ($\geq .50$):			.66

Note: * $p < .05$, ** $p < .01$; *** $p < .001$

Team reflexivity

Team task reflexivity was measured according to West and Markiewicz (2004) and Carter and West (1998) on a five-point Likert scale. This scale constitutes the original scale for task reflexivity and is most commonly used in reflexivity research. The scale was assessed according to the quality criteria as outlined in Table 11.

As can be seen in Table 18 and in contrast to previous results with this scale (e.g., Cater & West, 1996), two items of the team task reflexivity scale (TR5 and TR8 – both reverse coded items) had low indicator reliabilities, and did not load significantly on the latent variable. Again, this result may be attributed to misresponse, as described by Swain et al. (2008). Both items have consequently been discarded from the measurement model because this involved an increase of the composite reliability (from .64 to .72). While TR3, TR4, TR6 and TR7 also exhibited low indicator reliabilities, their elimination was not associated with further increases of the composite reliability, and it was decided to keep them in the measurement model. After elimination of the two items, composite reliability was above the required value

($\alpha = .72$), but the AVE was below the required .50. Hence, the convergence validity of the scale is questionable and results need to be interpreted with caution, since only 41% of the task reflexivity scale was explained by its indicators. Although a low convergent validity can be calculated from previous factor analyses of the scale (e.g., in West & Anderson, 1996), the low convergent validity did not prevent from using this scale.

Table 18: Quality criteria for the team task reflexivity scale

Scale: Team task reflexivity			
Cronbach's alpha ($\geq .70$)		.72 (.64) ^b	
Indicators		Factor loading (confirmatory)	Indicator reliability ($\geq .40$)
TR1	The team often reviewed its objectives.	.779***	.61
TR2	We regularly discussed whether the team is working effectively together.	.672***	.45
TR3	The methods used by the team to get the job done were often discussed.	.626***	.39
TR4	In this team we modified our objectives in light of changing circumstances.	.560***	.31
TR5 ^a	Team strategies were rarely changed. (Reverse coded)	-.060	.00
TR6	How well we communicate information was often discussed.	.553***	.31
TR7	The team often reviewed its approach to getting the job done.	.621***	.39
TR8 ^a	The way decisions are made was rarely altered. (Reverse coded)	-.126	.02
Average Variance Extracted (AVE) ($\geq .50$) ^c :			.41

^a These indicators have been discarded from the measurement model due to low indicator reliabilities and increasing composite reliability after elimination.

^b The number in brackets indicates Cronbach's alpha before the elimination of items from the scale.

^c After elimination of items TR5 and TR8.

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

7.8.3 Endogenous variables

Creativity

As practiced in previous creativity research (Almeida et al., 2008; Mumford & Gustafson, 1988; Silvia et al., 2008; Torrence Test of Creative Thinking Torrence, 1972), team responses for possible uses of a brick were coded for fluency, flexibility, and originality or uniqueness of responses. For fluency, the amount of ideas generated by a team was summed up. To assess the flexibility in the responses, two raters jointly and unaware of team diversity or process variables evaluated the variety in the teams' responses. As proposed by Milgram and Milgram (1976), originality of the ideas was rated by assigning 1 point for responses given by fewer than 5% of the sample and 0 points for all other responses. From these three

items, one latent variable for creativity was created and assessed according to the quality criteria as outlined in Table 11. The results are shown in Table 19 and the scale fulfilled all criteria for reliability and validity.

Table 19: Quality criteria of the team creativity scale

Scale: Team creativity			
Cronbach's alpha ($\geq .70$)		.86	
Indicators		Factor loading (confirmatory)	Indicator reliability ($\geq .40$)
FLU	Fluency	.933***	.87
FLE	Flexibility	.881***	.78
ORI	Originality	.819***	.67
Average Variance Extracted (AVE) ($\geq .50$):			.77

Note: * $p < .05$, ** $p < .01$; *** $p < .001$

Attractiveness of the idea

The attractiveness of the idea was additionally assessed reflectively for the purpose of validating the formative variable of innovativeness in a nomological network. Because research suggests that the presentation of a business plan is a persuasion process for investment decisions in which attractive ideas convince the reader that they should be pursued (Elsbach & Kramer, 2003), evaluators were asked to rate how convinced they were by the business idea and how they estimate the chances that investors and financiers can be found to realize that idea. Given the question “How worth pursuing do you consider the idea?” evaluators rated their persuasion of the idea on a five-point Likert scale (anchored “The idea is extremely worth pursuing.” (5) – “The idea is not worth pursuing.” (1)).

Since risk capital is scarce and of limited availability to innovative SMEs and start-ups (Asheim, 2004) raising funds of risk financing should only be possible for commercially attractive ideas. Given the question “How do you judge the chances that investors and financiers can be found to finance the realization of that idea?”, funding was measured on a five-point Likert scale (ranging from “Yes, it is very realistic that enough financial means can be acquired for that idea.” (5) – “No, I don't see any chances to acquire enough financial means for that idea.” (1)).

Two further items focused on the sales potential of the idea. Here, it was assumed that highly attractive ideas should aim at an unsatisfied or largely growing demand in the market and have considerable chances to create high turnovers for the firm.

Given the question “Is the demand already satisfied by other, comparable solutions?”, the demand was measured on a five-point Likert scale (ranging from “The demand is not

satisfied at all or grows very strongly.” (5) – “The demand in the market is sufficiently satisfied.” (1)).

The turnover that can possibly be earned by the firm was assessed given the question “How much turnover do you expect to be earned with that idea?” on a five-point Likert scale (anchored “Very high turnover can be earned with that idea.” (5) – “Very low turnovers can be earned with that idea.”).

The following Table 20 shows that the scale met all reliability and convergence validity criteria.

Table 20: Quality criteria for the attractiveness of the idea scale

Scale: Attractiveness of the idea			
Cronbach’s alpha ($\geq .70$)		.94	
Indicators		Factor loading (confirmatory)	Indicator reliability ($\geq .40$)
Funding	How do you judge the chances that investors and financiers can be found to finance the realization of that idea?	.952***	.83
Pursuit	How worth pursuing do you consider the idea?	.911***	.91
Demand	Is the demand already satisfied by other, comparable solutions?	.907***	.82
Turnover	How much turnover do you expect to be earned with that idea?	.889***	.79
Average Variance Extracted (AVE) ($\geq .50$) ^c :			.84

Note: * $p < .05$, ** $p < .01$; *** $p < .001$

Innovativeness

Team innovativeness was conceptualized as the quality of the product or service, as suggested by West and Anderson (1996). It was measured as a formative construct that includes different components. As described and shown in Figure 41 above, the measurement model of innovativeness was constructed and validated in a four step process.

The first step, to specify the content of the latent variable, has been described in Sections 3.1 of this thesis. Based on the defining characteristics of innovations, it was established that innovativeness consists of the components ‘degree of novelty’, ‘extent of change’, ‘macro impact’ and ‘micro impact’ of the innovation when being introduced into the market.

In a second step, suitable indicators were derived for all components. Given the question “To your knowledge, how new is the idea?”, novelty was measured on a five-point Likert scale (anchored “The idea has not been implemented worldwide and in any market before, thus is completely new.” (5) – “The idea is established in the target market, therefore only new to

the business planning company.” (1)). Given the question “How different is the solution to previously used solutions?”, the extent of change was measured on a five-point Likert scale (ranging from “A radical, revolutionary change to previous solutions.” (5) – “A small, incremental change to previous solutions.” (1)).

The impact on the market was measured along macro-economic and micro-economic factors. Macro-economic impact was measured given the question “What effects on the market do you expect from the implementation of the idea?” on a five-point Likert scale (anchored “Very strong effects on the market and on incumbent firms.” (5) – “No effects on the market and on incumbent firms.” (1)). Because pre-tests of the instrument have shown difficulties in the understanding of “possible effects on the market” this item was clarified with the note “Effects on the market include for instance a change of the market structure, effects on market participants and their market shares or profits, or rendering previous solutions obsolete.” The micro-impact was measured given the question “When the idea is introduced into the market, what advantages do you expect for customers compared to previous solutions?” on a five-point Likert scale (ranging from “Very big advantages for customers” (5) – “No advantages for customers” (1)).

Thereafter, the indicators were tested for multicollinearity. The correlations among the four items (see Table 21) and multicollinearity tests were calculated with SPSS 19 software (IBM, 2010).

Table 21: Correlations among formative indicators of innovativeness

	1	2	3	4
Novelty (1)				
Extent of Change (2)	.75***			
Macro Impact (3)	.64***	.81***		
Micro Impact (4)	.58***	.76***	.79***	

Note: * $p < .05$, ** $p < .01$; *** $p < .001$

Table 21 indicates high and significant correlations among the indicators of the formative construct of innovativeness. These high correlations conform to previous results by Franke et al. (2006b) of between $r=.45$ and $r=.94$ (all significant at $p < .001$).

In a second step, tolerances, VIFs and the condition index were calculated for the innovativeness indicators by conducting multiple linear regressions (Huber et al., 2007). In a series of linear regressions, each indicator was modelled as the dependent variable from all remaining indicators (Weiber & Mülhhaus, 2010) using collinearity diagnostics. The results are shown in Table 22 to Table 25.

Table 22: Multicollinearity statistics with novelty as dependent variable

	VIF	Tolerance	Condition index	R ²
Extent of Change	3.26	.31		
Macro Impact	3.70	.27		
Micro Impact	2.95	.34		
Condition Index			15.51	
R ²				.57

Note: Novelty is used as the dependent variable, therefore not included in this table.

This test reveals medium degrees of multicollinearity for the indicators of innovativeness. The usual threshold of $VIF > 10$ for high multicollinearity has not been met, but the more cautious cut-off point of $VIF > 3.3$ (Diamantopoulos & Siguaw, 2006) has been exceeded for macro impact and approximated by extent of change. The condition index was 15.51, which falls in the range for concern of multicollinearity.

The results of a second regression with extent of change as the dependent variable are shown in Table 23. Although the VIF and tolerances in this regression do not give reason for concern, the condition index of 15.40 falls in the range of concern for multicollinearity.

Table 23: Multicollinearity statistics with extent of change as dependent variable

	VIF	Tolerance	Condition index	R ²
Novelty	1.74	.58		
Macro Impact	3.06	.33		
Micro Impact	2.71	.37		
Condition Index			15.40	
R ²				.77

Note: Extent of change is used as the dependent variable, therefore not included in this table.

A third regression with macro impact delivered multicollinearity indices as shown in Table 24. Again, in this regression the threshold of $VIF > 3.3$ (Diamantopoulos & Siguaw, 2006) has been exceeded for extent of change and the condition index was with 15.30 in a range for concern.

Table 24: Multicollinearity statistics with macro impact as dependent variable

	VIF	Tolerance	Condition index	R ²
Novelty	2.29	.44		
Extent of change	3.56	.28		
Micro Impact	2.33	.43		
Condition Index			15.30	
R ²				.73

Note: Macro impact is used as the dependent variable, therefore not included in this table.

In a fourth and last regression, micro impact was used as the dependent variable with the following multicollinearity indices (Table 25). Again, in this regression the threshold of VIF > 3.3 has been exceeded for extent of change and the condition index was with 15.46 in a range for concern.

Table 25: Multicollinearity statistics with micro impact as dependent variable

	VIF	Tolerance	Condition index	R ²
Novelty	2.31	.43		
Extent of change	3.97	.25		
Micro Impact	2.94	.34		
Condition Index			15.46	
R ²				.66

Note: Micro impact is used as the dependent variable, therefore not included in this table.

In sum, the data suggests that the formative measurement model requires further examination of the indicators (Weiber & Mühlhaus, 2010). Mostly, the indicator ‘extent of change’ causes multicollinearity problems by compensating the explanatory power of the other variables. The original SPSS outputs can be found in Appendix 13.

Postponing the multicollinearity issue, the formative latent variable innovativeness was tested for external validity using the nomological approach (Diamantopoulos & Winklhofer, 2001; Huber et al., 2007). In this step, innovativeness needs to be linked to another (reflective) construct with which it would be expected to be linked (e.g., an antecedent or a consequence). Although creativity is without doubt a necessary antecedent to innovativeness, the relationship between idea generation and implementation into an innovation within groups has largely been ignored in research (Nijstad & De Dreu, 2002; West, 2002b). Thus, creativity is not considered to be suitable since teams may have discarded highly innovative ideas because of the associated higher levels of risk and uncertainty.

Attractiveness of a business opportunity deemed more suitable, because it is a logic consequence of innovativeness. Empirical investigations have shown that product or service

innovativeness is a central driver of new product performance (Lilien et al., 2002; Talke et al., 2009).

The test for external validity was conducted in SmartPLS as suggested by Henseler et al. (2009). The standardized regression coefficient from innovativeness to opportunity attractiveness is strong and significant ($\beta=.85$; $p<.001$ two-tailed; original PLS output in Appendix 14). Furthermore, innovativeness explained 73% of the attractiveness of a business idea, which can be considered as substantial. Thus, external validity of innovativeness has been established.

Furthermore, coming back to the issue of multicollinearity, the path estimation showed that the weights of novelty and extent of change were low and insignificant ($\beta=.12$; $p>.05$ one-tailed for novelty; $\beta=.14$; $p>.05$ one-tailed for extent of change). Because novelty is a necessary characteristic of innovations (OECD, 2005), this result is theoretically questionable and is another indicator for the multicollinearity issues (Weiber and Mühlhaus, 2010).

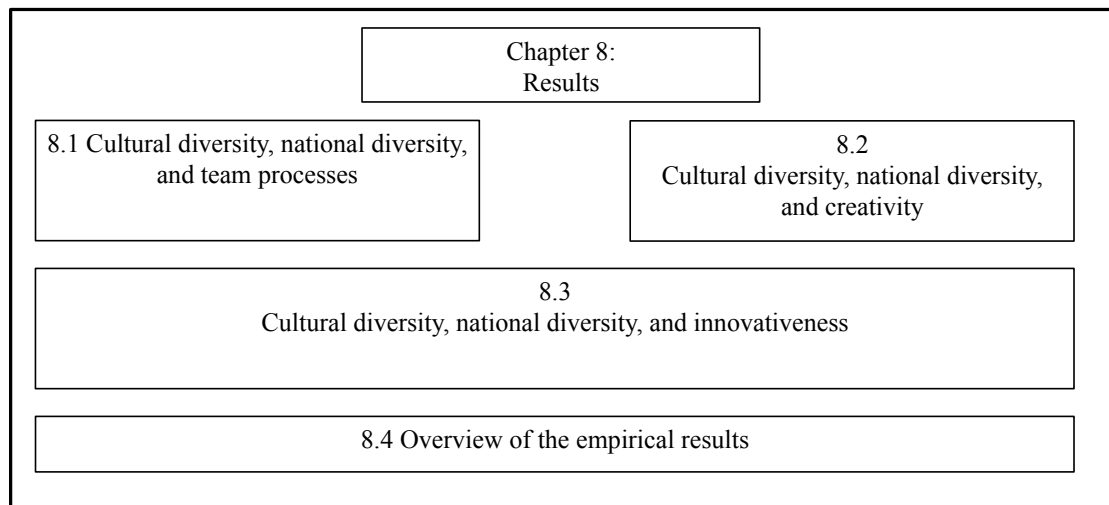
Although the usual procedure to deal with multicollinearity issues would be to eliminate the indicator that causes the multicollinearity issues (e.g., Bollen & Lennox, 1991; Diamantopoulos & Siguaw, 2006; 2006; Diamantopoulos & Winklhofer, 2001; Huber et al., 2007), the “extent of change” is an important and distinct characteristic of an innovation (OECD, 2005). The elimination is thus considered as theoretically inappropriate.

The alternative approach to deal with multicollinearity was described by Albers and Hildebrandt (2006). They suggest combining the formative indicators by creating an index, which can then be used as a single item construct in subsequent analyses. This research followed their recommendation and created an index of the four indicators of innovativeness to solve the multicollinearity issue.

8. Results

This chapter presents the results of the empirical investigation. Building on theoretical models derived in Chapter 6, the results of the empirical testing of the models are presented. The first section deals with effects from cultural diversity on team processes. Thereafter, two models relating cultural and national diversity to creativity and innovativeness are empirically tested. The outline and contents of the present chapter are shown in Figure 42.

Figure 42: Outline of Chapter 8



8.1 Cultural diversity, national diversity, and team processes

The goal of this research is to test the different effects of two forms of cultural diversity (cultural variety and cultural separation) on group processes and performance outcomes. Furthermore, it is analysed whether national diversity could be a useful proxy for cultural diversity in research. This first subsection deals with initial analyses only on team process variables.

The first set of hypotheses (H1a – H3b) comprised relationships of cultural variety, cultural separation, and national diversity to team processes of communication, task reflexivity, and task conflict in teams.

To assess the quality criteria (see Table 11 and Table 12 above) for the outer model, the composite reliability, the indicator reliability, and the convergence validity (AVE) have been analysed and verified above (see Section 7.8). Table 26 presents the test for discriminant validity (Fornell-Larcker Criterion).

Table 26: AVE and correlations between constructs

	1	2	3	4	5	6
(1) Cultural Separation	1.00					
(2) Cultural Variety	0.74	1.00				
(3) Team Communication	-0.19	-0.07	0.71			
(4) National Diversity	0.10	0.10	-0.22	1.00		
(5) Task Conflict	0.06	-0.02	-0.50	0.18	0.87	
(6) Task Reflexivity	-0.14	-0.09	0.47	-0.02	-0.13	0.64

Note: Bold number on the diagonal show the square root of the AVE; numbers below the diagonal represent construct correlations.

The quality criteria for the measurement model are summarized in Table 27. Except for task reflexivity, for which the AVE did not exceed 0.5, all quality criteria were met.

Table 27: Overview of quality criteria

	Composite reliability (see Chapter 7.8)	Indicator reliability (see Chapter 7.8)	Convergence validity (see Chapter 7.8)	Discriminant validity
Cultural Separation	✓	✓	✓	✓
Cultural Variety	✓	✓	✓	✓
Team Communication	✓	✓	✓	✓
National Diversity	✓	✓	✓	✓
Task Conflict	✓	✓	✓	✓
Task Reflexivity	✓	✓	×	✓

In a second step, the structural model was interpreted according to the criteria presented in Table 13 (see above) and suggested by Henseler et al. (2009). All Q^2 results, established by the construct cross-validated redundancy, were above zero, indicating that the latent variables in the model have predictive relevance (Table 28). The R^2 of the process variables suggest that cultural and national diversity explain between 2% and 9% of the variance of the process variables. By including the effect from communication on task reflexivity, the explained variance of task reflexivity increases to 23%. For research in behavioural science, these effects are considered as small and medium (Cohen, 1988).

Table 28: Effect sizes and predictive quality of the model

	R^2	Effect size	Q^2 (Cross-Validated Redundancy)
Communication	0.09	Small - moderate	0.04
Task Conflict	0.04	Small	0.05
Task Reflexivity	0.23	medium – substantial	0.24

The bootstrapping procedure (Chin, 1998a; Tenenhaus et al., 2005) was used to generate t-statistics for evaluating the significance of the parameters. The parameter estimation is shown in Table 29.

Table 29: Statistical results for path estimation

Paths	β	s.d.	SE	t-value	Sign.	f^2	Effect size
Cultural Separation → Communication	-0.31*	0.15	0.15	2.07	0.04	0.05	s
Cultural Separation → Task Conflict	0.15	0.15	0.15	1.00	0.32	0.01	-
Cultural Separation → Task Reflexivity	-0.01	0.14	0.14	0.09	0.93	0.00	-
Cultural Variety → Communication	0.19	0.15	0.15	1.24	0.21	0.02	s
Cultural Variety → Task Conflict	-0.15	0.14	0.14	1.07	0.29	0.01	-
Cultural Variety → Task Reflexivity	-0.06	0.14	0.14	0.39	0.70	0.00	-
Communication → Task Reflexivity	0.48***	0.12	0.12	3.98	0.00	0.27	m
National Diversity → Communication	-0.21*	0.10	0.10	2.12	0.03	0.05	s
National Diversity → Task Conflict	0.18 [†]	0.10	0.10	1.87	0.06	0.03	s
National Diversity → Task Reflexivity	0.09	0.11	0.11	0.84	0.40	0.01	-

Note: [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; $t_{0.05, 4999} = 1.960$; $t_{0.01, 4999} = 2.576$; $t_{0.001, 4999} = 3.291$ (two-tailed); s = small effect; m = medium effect; l = large effect

The results provide partial empirical support for the first hypothesis, which predicted an effect of cultural diversity on team communication. H1a can be accepted, because the predicted negative effect of cultural separation on team communication was supported. H1b needs to be rejected, because the path coefficient from cultural variety on team communication did not reach statistical significance, although the effect was in the predicted direction. In contrast to what was predicted based on cognition and information processing

theories, the effect from national diversity on team communication is negative, although being measured in the diversity form of variety.

Hypothesis H2 predicted positive effects from cultural diversity on conflict, and can only be partially accepted. Cultural separation has shown the predicted positive effect on task conflict, but the effect was too small to reach statistical significance. In contrast to what was predicted (H2b), cultural variety has a negative, but statistically non-significant effect on task conflict. In support of H2b, national diversity has shown a marginally significant positive effect on task conflict.

Hypothesis H3 predicted positive effects from cultural diversity on task reflexivity. Since all effects are small and did not reach statistical significance, this hypothesis needs to be rejected.

The fourth hypothesis predicted a positive effect from communication on task reflexivity that mediates the direct effect between cultural diversity and task reflexivity. This effect was empirically confirmed ($\beta = .48$; $p < .001$). Because of the insignificant direct effects from cultural separation and national diversity on task reflexivity, but the significant indirect paths, a mediating effect can be expected and was tested for statistical significance.

Usually, the significance of indirect effects is tested with Sobel's test equation (Baron & Kenny, 1986). However, Preacher and Hayes (2004) argue that the Sobel test only works well with large sample sizes. They propose using the bootstrapping procedure as a nonparametric alternative with higher statistical power especially with lower samples sizes and without the assumption of a multivariate normality in the sample distribution (Preacher & Hayes, 2004; 2008). For those reasons, their recommendation was followed and bootstrapping was used to assess the statistical significance of indirect effects. The result is presented in the following Table 30.

Table 30: Statistical results for indirect paths

Paths	Indirect effect ab	Mean bootstrapped ab	Bootstrapped s.d.	t-value	Sign.
Cultural Separation → Communication → Task Reflexivity	-0.15 [†]	-0.15	.09	1.65	0.10
National Diversity → Communication → Task Reflexivity	-0.10 [†]	-0.10	.06	1.79	0.07

Note: [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; $t_{0.05, 4999} = 1.960$; $t_{0.01, 4999} = 2.576$; $t_{0.001, 4999} = 3.291$ (two-tailed)

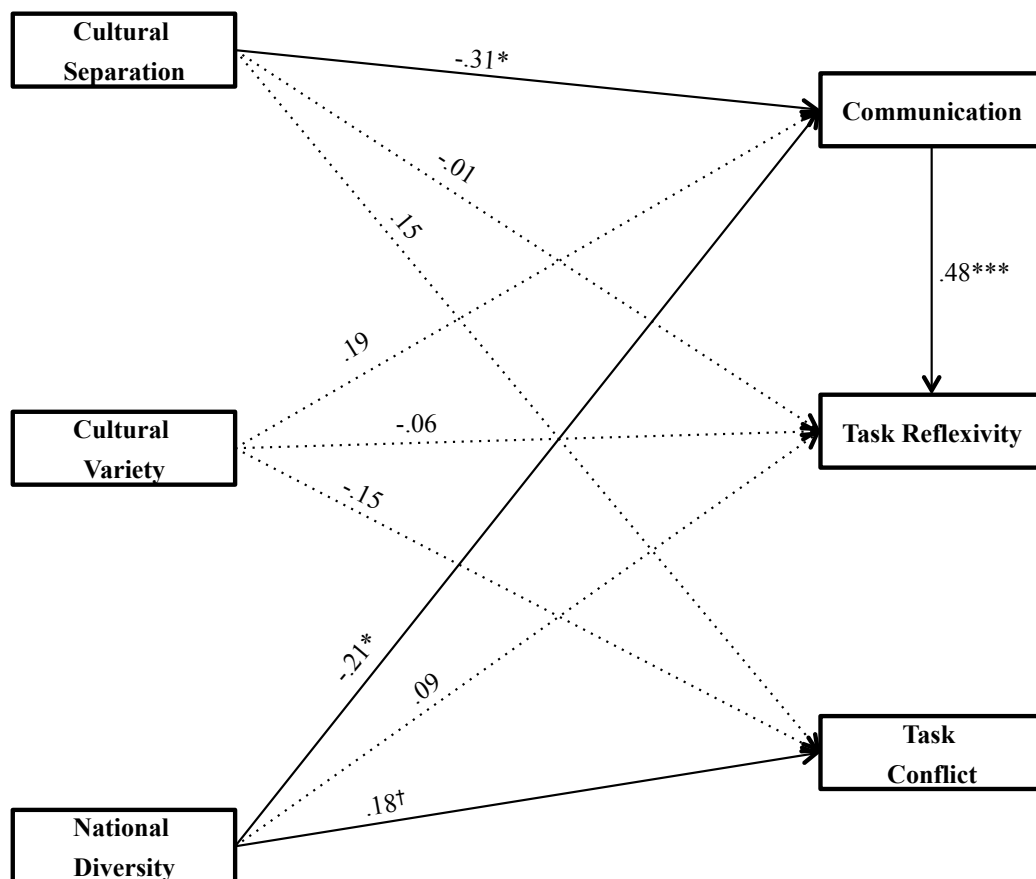
The results show marginally significant ($p < .10$) indirect effects on task reflexivity. Hence, for cultural separation and national diversity, H4 can be accepted with caution. It appears to

confirm that the negative effect on communication also mitigates effects on task reflexivity in teams with high cultural separation and national diversity.

Furthermore, the direction of the empirical effects from national diversity contradict the operationalization of national diversity in the form of variety. Instead, national diversity had a similar direction of effects as cultural separation. Effects on communication and task conflict were statistically (marginally) significant.

The path coefficients (standardized regression coefficients; β) and coefficients of determination (R^2) of the model estimation are shown in Figure 43 (original PLS output in Appendix 15).

Figure 43: Empirical path model for team processes



Lastly, Huber et al. (2007) recommend assessing whether multicollinearity could create problems at the structural level. Each endogenous construct that is determined by two or more latent variables is subject to possible issues of multicollinearity between the endogenous constructs (p.108). Hence, as proceeded with formative indicators in the measurement model, a series of regression analyses needed to be conducted. The analysis was carried out as suggested by Huber et al. (2007). The highest VIF was 2.32, which is

largely below the common threshold of $VIF < 10$ (Huber et al., 2007) and below the more conservative threshold of $VIF < 3.3$ (Diamantopoulos & Siguaw, 2006). Hence, all values were well in the acceptable range. The original SPSS outputs for multicollinearity tests of the structural models can be found in Appendix 22.

8.2 Cultural and national diversity and creativity

The second set of hypotheses (H10-H13) comprised direct and indirect effects of cultural and national diversity with team creativity.

Again, in a first step, the quality criteria (see Table 11) for the outer model were assessed. The composite reliability, the indicator reliability, and the convergence validity (AVE) have been analysed and verified above (see Chapter 7.8). Only the convergence validity for task reflexivity was below the required AVE threshold and needs to be interpreted with caution. Table 31 presents the test for discriminant validity (Fornell-Larcker Criterion).

Table 31: AVE and correlations between constructs

	1	2	3	4	5	6	7
(1) Communication	0.71						
(2) Creativity	-0.12	0.88					
(3) ND	-0.22	0.21	1.00				
(4) Cultural Separation	-0.19	-0.05	0.10	1.00			
(5) Cultural Variety	-0.07	0.17	0.10	0.74	1.00		
(6) Task Conflict	-0.50	-0.04	0.18	0.06	-0.02	0.81	
(7) Task Reflexivity	0.47	0.06	-0.02	-0.14	-0.09	-0.13	0.64

Note: Bold number on the diagonal show the square root of the AVE; numbers below the diagonal represent construct correlations.

Since all latent variables in this model shared the highest variance with their own indicators and not with other latent variables, the Fornell-Larcker criterion is fulfilled. Furthermore, the cross-loadings show that fluency, flexibility, and originality load highest with their assigned latent variable creativity (see Table 32). Hence, discriminant validity of all latent variables in the model is established.

Table 32: Cross-loadings of creativity items with other latent variables in the creativity model

	Communication	Creativity	National Diversity	Cultural Separation	Cultural Variety	Task Conflict	Task Reflexivity
Communication	1.00	-0.12	-0.22	-0.19	-0.07	-0.50	0.47
Flexibility	-0.04	0.86	0.25	-0.14	0.07	-0.05	0.02
Fluency	-0.11	0.92	0.16	-0.11	0.09	-0.02	0.07
National Diversity	-0.22	0.21	1.00	0.10	0.10	0.18	-0.02
Originality	-0.16	0.86	0.15	0.11	0.27	-0.04	0.07
Cultural Separation	-0.19	-0.05	0.10	1.00	0.74	0.06	-0.14
Cultural Variety	-0.07	0.17	0.10	0.74	1.00	-0.02	-0.09
Task Conflict	0.47	0.06	-0.02	-0.14	-0.09	-0.13	1.00
Task Reflexivity	-0.50	-0.04	0.18	0.06	-0.02	1.00	-0.13

In sum, discriminant validity of the model was established. Hence, the structural model can be evaluated in a second step.

As before, all Q^2 results, established by the construct cross-validated redundancy, were above zero, indicating that the latent variables in the model have predictive relevance (Table 33). Again, the R^2 of the communication was 0.09 and of task conflict 0.04. The model explains 19% of the variance of team creativity, which is considered as a moderate effect in behavioural science (Cohen, 1988).

Table 33: Effect sizes and predictive quality of the creativity model

	R^2	Effect size	Q^2 (Cross-Validated Redundancy)
Communication	0.09	small - moderate	0.04
Creativity	0.19	moderate	0.12
Task Conflict	0.04	small	0.05
Task Reflexivity	0.23	moderate - large	0.03

The bootstrapping procedure (Chin, 1998a; Tenenhaus et al., 2005) was used to evaluate the significance of the parameters, and the results are shown in Table 34.

Table 34: Statistical results for path estimations

Paths	β	s.d.	SE	t-value	Sign.	f^2	Effect size
Communication → Creativity	-0.29*	0.13	0.13	2.19	0.03	0.05	s
Communication → Task Reflexivity	0.48***	0.12	0.12	4.18	0.00	0.27	m
National Diversity → Creativity	-0.21*	0.09	0.09	2.23	0.03	0.05	s
National Diversity → Task Conflict	0.18*	0.09	0.09	1.96	0.05	0.03	s
National Diversity → Task Reflexivity	0.09	0.10	0.10	0.87	0.39	0.01	-
Cultural Separation → Creativity	-0.31*	0.14	0.14	2.19	0.03	0.05	s
Cultural Separation → Task Conflict	-0.44**	0.14	0.14	3.28	0.00	0.09	s
Cultural Separation → Task Reflexivity	0.15	0.14	0.14	1.06	0.29	0.01	-
Cultural Variety → Communication	-0.01	0.14	0.14	0.09	0.93	0.00	-
Cultural Variety → Creativity	0.19	0.14	0.14	1.31	0.19	0.02	s
Cultural Variety → Task Conflict	0.47***	0.13	0.13	3.69	0.00	0.12	s-m
Cultural Variety → Task Reflexivity	-0.15	0.14	0.14	1.10	0.27	0.01	-
Task Conflict → Creativity	-0.06	0.13	0.13	0.41	0.68	0.00	-
Task Reflexivity → Creativity	-0.16	0.11	0.11	1.54	0.12	0.02	s
Task Reflexivity → Task Conflict	0.16	0.11	0.11	1.44	0.15	0.02	s

Note: * $p < .05$, ** $p < .001$, *** $p < .0001$; $t_{0.05, 4999} = 1.960$; $t_{0.01, 4999} = 2.576$; $t_{0.001, 4999} = 3.291$ (two-tailed)
s = small effect; m = medium effect; l = large effect

The results support Hypotheses H5a and H5b, because cultural variety has shown a positive, and cultural separation a negative significant effect on team creativity. National diversity has shown – similar to cultural variety – a positive, but smaller effect on creativity. Furthermore, as predicted, team communication was negatively related to creativity. To test the predicted mediating effect (H6) from team communication for statistical significance, the bootstrapping procedure was applied (see above). The results are presented in Table 35.

Table 35: Statistical results for indirect effects

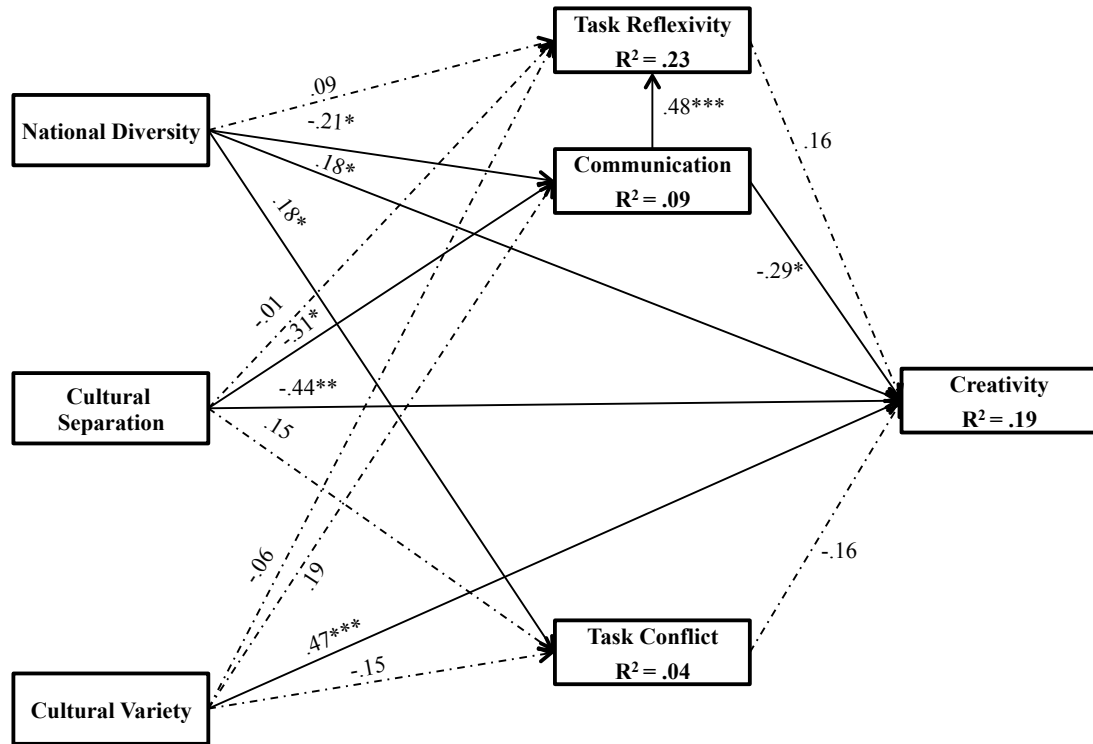
Paths	Indirect effect ab	Mean bootstrapped ab	Bootstrapped s.d.	t-value	Sign.
Cultural Separation → Communication → Creativity	0.09	0.09	0.07	1.32	0.19
National Diversity → Communication → Creativity	0.06	0.06	0.04	1.52	0.13

Note: [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; $t_{0.05, 4999} = 1.960$; $t_{0.01, 4999} = 2.576$; $t_{0.001, 4999} = 3.291$ (two-tailed)

Both indirect effects are small and non-significant. Therefore, a mediating effect by communication on creativity was not supported leading to rejecting H6. Furthermore, both effects from task conflict and task reflexivity were non-significant, leading to reject H7 and H8.

The path coefficients (standardized regression coefficients; β) and coefficients of determination (R^2) of the creativity model are shown in Figure 44 (original PLS output in Appendix 19).

Figure 44: Empirical path model for creativity



Again, the model was tested for possible multicollinearity at the structural level. Analyses of the VIF revealed that it did not exceed 2.35, which is well below the conservative threshold of $VIF < 3.3$.

8.3 Cultural and national diversity and innovativeness

The theoretical model in which cultural and national diversity influence team innovativeness directly and indirectly through team processes (see Figure 33), and the associated hypotheses were tested in a further empirical model. As practiced before, discriminant validity of the model constructs was tested first. Table 36 presents the results for the Fornell-Larcker Criterion.

Table 36: AVE and correlations between constructs

	1	2	3	4	5	6	7	8
(1) Communication	0.71							
(2) Creativity	-0.11	0.88						
(3) Innovativeness	0.17	0.13	1.00					
(4) National Diversity	-0.22	0.22	-0.07	1.00				
(5) Cultural Separation	-0.19	-0.06	0.03	0.10	1.00			
(6) Cultural Variety	-0.07	0.16	0.12	0.10	0.74	1.00		
(7) Task Reflexivity	0.47	0.06	0.17	-0.02	-0.14	-0.09	0.64	
(8) Task Conflict	-0.50	-0.04	0.05	0.18	0.06	-0.02	-0.13	0.81

Note: Bold number on the diagonal show the square root of the AVE; numbers below the diagonal represent construct correlations.

In addition, the criterion of discriminant validity was tested by analysing the cross-loadings in the model. Since all items loaded highest on their assigned variables (see Table 37), discriminant validity was established.

Table 37: Cross-loadings of creativity items with other latent variables in the model

	Communication	Creativity	Innovativeness	National Diversity	Overall Separation	Overall Variety	Task Reflexivity	Task Conflict
Communication	1.00	-0.11	0.17	-0.22	-0.19	-0.07	0.47	-0.50
Flexibility	-0.04	0.88	0.12	0.25	-0.14	0.07	0.02	-0.05
Fluency	-0.11	0.91	0.01	0.16	-0.11	0.09	0.07	-0.02
Innovativeness	0.17	0.13	1.00	-0.07	0.03	0.12	0.17	0.05
National Diversity	-0.22	0.22	-0.07	1.00	0.10	0.10	-0.02	0.18
Originality	-0.16	0.85	0.21	0.15	0.11	0.27	0.07	-0.04
Cultural Separation	-0.19	-0.06	0.03	0.10	1.00	0.74	-0.14	0.06
Cultural Variety	-0.07	0.16	0.12	0.10	0.74	1.00	-0.09	-0.02
Task Reflexivity	0.47	0.06	0.17	-0.02	-0.14	-0.09	1.00	-0.13
Task Conflict	-0.50	-0.04	0.05	0.18	0.06	-0.02	-0.13	1.00

The remaining quality criteria for the measurement model of reflective latent variables were already analysed above (see Chapter 7.8). Except for task reflexivity, for which the AVE did not exceed 0.5, all quality criteria were met. Furthermore, the quality assessment of the latent variable innovativeness as a formative measurement model was described above, and the issue of multicollinearity has been dealt with by creating an index for innovativeness.

Thereafter, the structural model was interpreted according to the criteria presented in Table 13. As before, all Q^2 results, measured by the construct cross-validated redundancy, were above zero. Hence the latent variables in the model have predictive relevance (see Table 38). The R^2 of communication, task conflict, and task reflexivity are unchanged to previous models. The model explains 14% of the variance of creativity and 11% of the variance of innovativeness, which are considered as moderate effects (Cohen, 1988).

Table 38: Effect sizes and predictive quality of the model (innovativeness)

	R^2	Effect size	Q^2 (Cross-Validated Redundancy)
Communication	0.09	small – moderate	0.06
Creativity	0.14	moderate	0.10
Innovativeness	0.11	moderate	0.01
Task Reflexivity	0.23	moderate – large	0.23
Task Conflict	0.04	small	0.06

As previously practiced, the bootstrapping procedure was used to generate t-statistics for evaluating the significance of the parameters. The parameter estimation is shown in Table 39.

Table 39: Statistical results for path estimation (innovativeness)

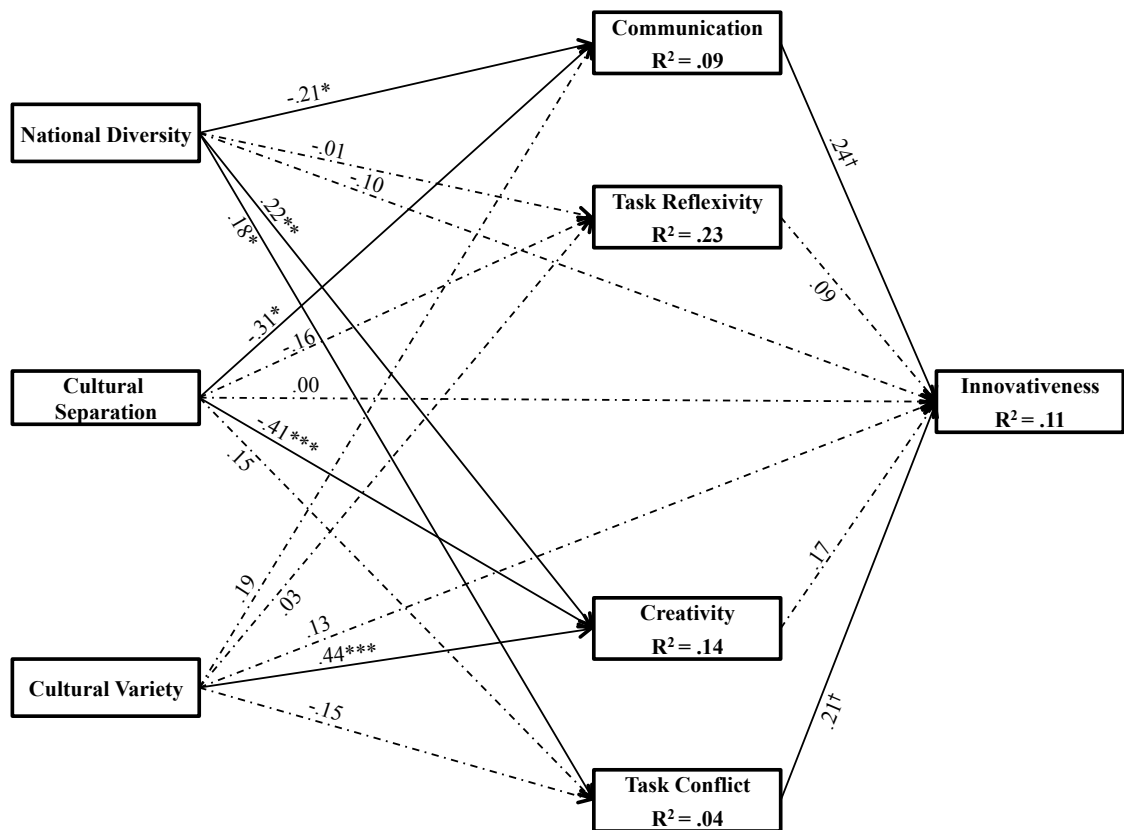
Paths	β	s.d.	SE	t-value	Sign.	f^2	Effect size
Communication → Innovativeness	0.24 [†]	0.14	0.14	1.74	0.08	0.03	s
Creativity → Innovativeness	0.17	0.13	0.13	1.29	0.20	0.02	s
National Diversity → Communication	-0.21*	0.09	0.09	2.26	0.02	0.05	s
National Diversity → Creativity	0.22**	0.08	0.08	2.70	0.01	0.05	s
National Diversity → Innovativeness	-0.10	0.09	0.09	1.11	0.27	0.01	-
National Diversity → Task Reflexivity	-0.01	0.10	0.10	0.11	0.91	0.00	-
National Diversity → Task Conflict	0.18*	0.09	0.09	1.98	0.05	0.03	s
Cultural Separation → Communication	-0.31*	0.14	0.14	2.16	0.03	0.05	s
Cultural Separation → Creativity	-0.41***	0.13	0.13	3.25	0.00	0.08	s
Cultural Separation → Innovativeness	0.00	0.18	0.18	0.01	0.99	0.00	-
Cultural Separation → Task Reflexivity	-0.16	0.15	0.15	1.08	0.28	0.01	-
Cultural Separation → Task Conflict	0.15	0.15	0.15	1.03	0.30	0.01	-
Cultural Variety → Communication	0.19	0.14	0.14	1.33	0.18	0.02	s
Cultural Variety → Creativity	0.44***	0.12	0.12	3.74	0.00	0.09	s
Cultural Variety → Innovativeness	0.13	0.18	0.18	0.76	0.45	0.01	-
Cultural Variety → Task Reflexivity	0.03	0.14	0.14	0.24	0.81	0.00	-
Cultural Variety → Task Conflict	-0.15	0.14	0.14	1.10	0.27	0.01	-
Task Reflexivity → Innovativeness	0.09	0.13	0.13	0.68	0.50	0.01	-
Task Conflict → Innovativeness	0.21 [†]	0.12	0.12	1.78	0.08	0.03	s

Note: [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; $t_{0.05, 4999} = 1.960$; $t_{0.01, 4999} = 2.576$; $t_{0.001, 4999} = 3.291$ (two-tailed); s = small effect; m = medium effect; l = large effect

In contrast to predictions in Hypothesis H9, cultural separation and cultural variety were not directly and significantly related to innovativeness. Although cultural variety has shown the predicted positive effect, the effect size was too small to reach statistical significance. The results also show marginally significant effects from communication and task conflict on innovativeness that support theoretical considerations of a mediation effect. Surprisingly, creativity was also only non-significantly related to innovativeness, although the effect was in the predicted direction. This leads to rejecting H13. In contrast to predictions from H12, task reflexivity only has a negligibly small and non-significant effect on innovativeness. Therefore, H12 also needs to be rejected.

The path coefficients (standardized regression coefficients; β) and coefficients of determination (R^2) of the model estimation are shown in Figure 45 (original PLS output in Appendix 20).

Figure 45: Empirical path model for innovativeness



In Figure 45 and Table 39, it can be seen that task reflexivity was completely unrelated to any other variable in the model. Hence, task reflexivity did not contribute to the relationship effects in the innovativeness model and it was decided to exclude it and then to re-evaluate the model.

As can be seen in Table 40, the reduced model had good predictive quality. Furthermore, because task reflexivity did not have an effect on innovativeness, the R^2 of innovativeness dropped only marginally by 0.006. Again, effects on creativity and innovativeness are moderate, as the predictor variables explain 14% (creativity) and 11% (innovativeness) of the variance.

Table 40: Effect sizes and predictive quality of the model

	R ²	Previous R ²	ΔR^2	Effect size	Q ² (Cross-Validated Redundancy)
Communication	0.09	0.09	0.00	small - moderate	0.04
Creativity	0.14	0.14	0.00	moderate	0.10
Innovativeness	0.11	0.11	-0.006	moderate	0.04
Task Conflict	0.04	0.04	0.00	small	0.05

The parameter estimations from bootstrapping of the reduced model are shown in the following Table 41.

Table 41: Statistical results for path estimation (innovativeness2)

Paths	β	s.d.	SE	t- value	Sign.	f ²	Effect size
Communication → Innovativeness	0.29*	0.12	0.12	2.53	0.01	0.06	s
Creativity → Innovativeness	0.18	0.12	0.12	1.47	0.14	0.03	s
National Diversity → Communication	-0.21*	0.09	0.09	2.24	0.03	0.05	s
National Diversity → Creativity	0.22**	0.08	0.08	2.67	0.01	0.05	s
National Diversity → Innovativeness	-0.10	0.09	0.09	1.07	0.29	0.01	-
National Diversity → Task Conflict	0.18*	0.09	0.09	1.97	0.05	0.03	s
Cultural Separation → Communication	-0.31*	0.14	0.14	2.18	0.03	0.05	s
Cultural Separation → Creativity	-0.41**	0.13	0.13	3.16	0.00	0.08	s-m
Cultural Separation → Innovativeness	0.01	0.18	0.18	0.03	0.97	0.00	-
Cultural Separation → Task Conflict	0.15	0.14	0.14	1.04	0.30	0.01	-
Cultural Variety → Communication	0.19	0.14	0.14	1.33	0.18	0.05	s
Cultural Variety → Creativity	0.44***	0.12	0.12	3.78	0.00	0.09	s-m
Cultural Variety → Innovativeness	0.12	0.18	0.18	0.69	0.49	0.01	-
Cultural Variety → Task Conflict	-0.15	0.14	0.14	1.09	0.28	0.01	-
Task Conflict → Innovativeness	0.22*	0.11	0.11	1.96	0.05	0.04	s

Note: * $p < .05$, ** $p < .001$, *** $p < .0001$; $t_{0.05, 4999} = 1.960$; $t_{0.01, 4999} = 2.576$; $t_{0.001, 4999} = 3.291$ (two-tailed)
s = small effect; m = medium effect; l = large effect

In this model, the previously only marginally significant effects from communication and task conflict on innovativeness became significant at $p < 0.05$. This allows concluding that task reflexivity, although not significantly related to innovativeness (see Table 39), partially mediates the relationships of communication and task conflict on innovativeness. Chin (2010, p.678) suggests that when the inclusion or exclusion of a construct into a model changes the path of an existing construct from significant to non-significant (or vice-versa), it provides support for a mediating effect of the additional construct.

To test the predicted mediation effects by task conflict and task communication, the indirect effects from national diversity and cultural separation were tested for statistical significance. The results are shown in Table 42 below.

Table 42: Statistical results for the indirect effects

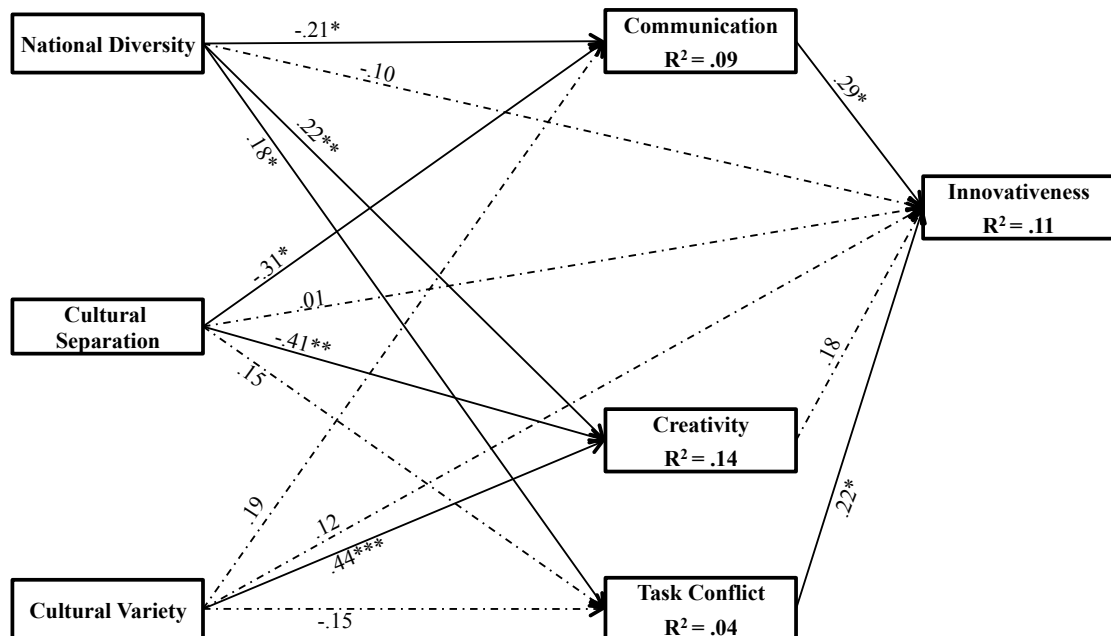
Paths	Indirect effect ab	Mean bootstrapped ab	Bootstrapped s.d.	t-value	Sign.
National Diversity → Communication → Innovativeness	-0.06	-0.06	0.04	1.51	0.13
Cultural Separation → Communication → Innovativeness	-0.09	-0.09	0.06	1.42	0.16
National Diversity → Task Conflict → Innovativeness	0.04	0.04	0.03	1.32	0.19

Note: [†] p < .10, * p < .05, ** p < .01, *** p < .001; $t_{0.05, 4999} = 1.960$; $t_{0.01, 4999} = 2.576$; $t_{0.001, 4999} = 3.291$ (two-tailed)

All indirect effects were found to have a low effect size and were non-significant. Therefore, mediating effects from communication and task conflict on innovativeness in culturally and nationally diverse teams could not be found in this research and H10 and H11 need to be rejected.

The path coefficients (standardized regression coefficients; β) and coefficients of determination (R^2) of the model estimation are shown in Figure 46 (original PLS output in Appendix 21).

Figure 46: Empirical path model (innovativeness2)



Again, a final test involved a possible multicollinearity in the structural model. The highest VIF was at 2.36. This is below conservative thresholds.

8.4 Overview of the empirical results

In the previous sections of this chapter, results from empirical research on the effects of cultural and national diversity on team processes and creativity, as well as innovativeness were presented. Team processes included task reflexivity, communication, and task conflict. The following Table 43 gives an overview of the empirical results. For the purpose of clarity, only significant and marginally significant effects are included.

Table 43: Overview of the significant empirical results

Dependent Variable →	Communication	Task Reflexivity	Task Conflict	Creativity	Innovativeness
Independent variable ↓					
Cultural Separation	-.31*	(-.15 [†] Com)		-.44**	
Cultural Variety				.47***	
National Diversity	-.21*	(-.10 [†] Com)	.18 [†]	.18*	
Communication		.48***		-.29*	.24 [†] /.29*
Task Reflexivity					
Task Conflict					.21 [†] /.22*

Note: [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; $t_{0.05, 4999} = 1.960$; $t_{0.01, 4999} = 2.576$; $t_{0.001, 4999} = 3.291$ (two-tailed); Indirect paths and mediator variables in brackets

Com = Communication

To summarize the results, the following Table 44 provides an overview of all hypotheses and whether they were supported or not.

Table 44: Overview of supported and rejected Hypotheses

Hyp.		Support
H1a	Cultural separation has a negative effect on communication in teams.	Yes
H1b	Cultural variety has a positive effect on communication in teams.	No
H2a	Cultural separation has a positive effect on task conflict.	No
H2b	Cultural variety has a positive effect on task conflict.	Partial
H3a	Cultural variety has a positive effect on task reflexivity.	No
H3b	Cultural separation has a negative effect on task reflexivity.	No
H4	Communication mediates the relationship between cultural diversity and task reflexivity.	Partial
H5a	Cultural variety has a positive direct effect on group creativity.	Yes
H5b	Cultural separation has a negative direct effect on group creativity.	Yes
H6	Team communication mediates the relationship between cultural diversity team creativity.	No
H7	Task conflict mediates the relationship between cultural diversity and team creativity.	No
H8	Task reflexivity mediates the relationship between cultural diversity and creativity.	No
H9a	Cultural variety has a direct positive effect on innovativeness.	No
H9b	Cultural separation has a direct negative effect on innovativeness.	No
H10	Communication mediates the relationship between cultural diversity and innovativeness	No
H11	Task conflict mediates the relationship between cultural diversity and innovativeness.	No
H12	Task reflexivity mediates the relationship between cultural diversity and innovativeness	No
H13	Creativity mediates the relationship between cultural diversity and innovativeness.	No

9. Discussion and conclusions

A major shortcoming of diversity literature is related to a lacking consistence in empirical effects across studies (see above Chapter 5.4). These results have led to seeing diversity as a “double-edged” sword (Kravitz, 2005) that has the potential for providing positive and negative effects in organizations - interpreted by Gebert (2004) as a zero-sum game. To account for these inconclusive findings, Harrison and Klein (2007) discerned different forms of diversity (separation, variety, and disparity) that each have unique theoretical foundations and formulae for measuring the degree of diversity.

Since the importance of newer forms of teamwork for organizations increases and teams are increasingly cross-cultural and internationally composed, this research analysed the effects of cultural and national diversity on workgroup processes and outcomes. As for diversity research in general, the literature review revealed mixed results of cultural diversity on team processes and performance.

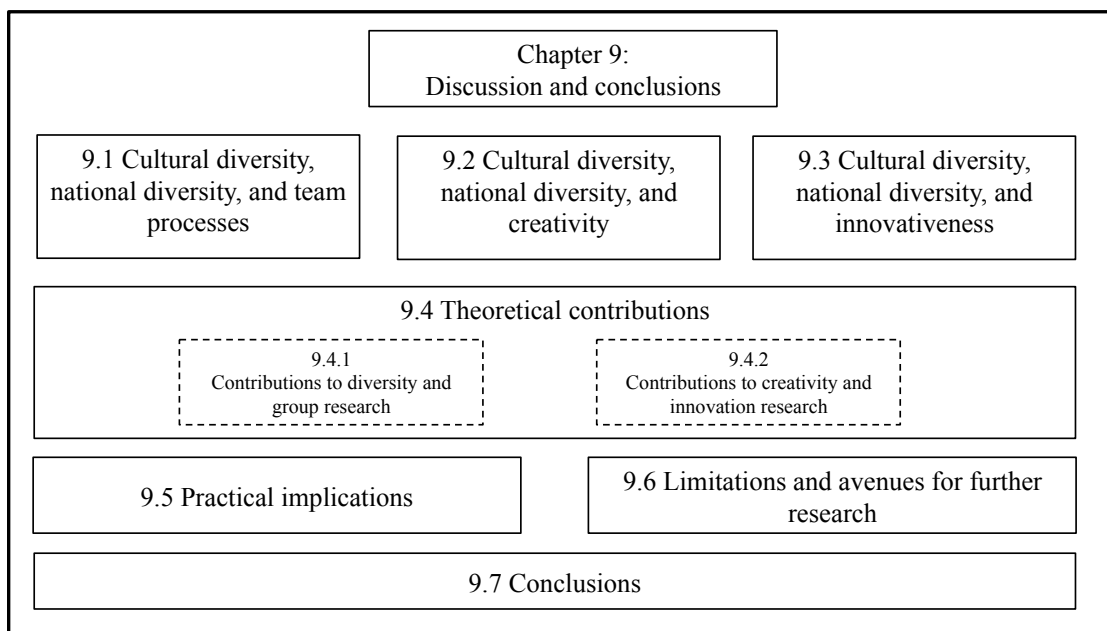
The present research suggests that several conceptual and methodological limitations can explain parts of the inconsistencies in cultural diversity research. It was argued based on cross-cultural literature (e.g., Triandis, 2007) that using various different nominally-scaled variables (nationality, ethnicity, race, and gender) disregards the complexity of culture as a diversity construct. The downside of categorical variables in cultural diversity research involves disregarding subcultures and biculturalism, an associated reverse ecological fallacy, and ignoring cultural distances.

The operationalization of cultural values was furthermore criticised in this research. Studies on cultural diversity that applied cultural values have generally only used a single dimension of culture (most often individualism/collectivism). This has been criticised by Tsui et al. (2007) and Chen et al. (2009b) for covering only a small part of the complex whole of culture.

Methodologically, three possible traps in cultural diversity research were identified by building on the differentiation of diversity forms by Harrison and Klein (2007). The first refers to an improper combination of form of diversity (including theoretical foundation and necessary scale level) and diversity calculation formula. The second issue concerns the neglect of alternative forms of diversity with regard to the attribute under study. Finally, it was shown that commonly used diversity formulae do not reliably distinguish between different forms of cultural diversity. The third issue therefore indicates an erroneous combination of form of diversity (including theoretical foundation, scale level, and calculation formula) and empirical object of analysis.

To overcome these limitations, this research aimed at discerning the effects of cultural diversity from national diversity in workgroups. Furthermore, using interval-scaled data on cultural value orientations from team members, this research operationalized two forms of cultural diversity within teams – cultural separation and cultural variety. It was argued that the simultaneous measurement of both forms allows differentiating their distinct effects on group processes and outcomes. The following sections discuss and interpret the results of both forms of cultural, as well as national diversity on team processes and outcomes from the empirical models, before more global conclusions and the limitations of this research are presented. The contents and outline of the final chapter is presented in Figure 47.

Figure 47: Outline and contents of the ninth chapter



9.1 Cultural diversity, national diversity, and team processes

In this first section, the findings of cultural and national diversity will be discussed and reflected upon with regard to previous theoretical and empirical research on group processes. Group processes are considered to mediate the relationship between group inputs and outputs (Ilgen et al., 2005).

Theoretical argumentations typically expect negative effects from a social categorization and separation perspective, and positive effects from a information-processing and variety perspective on group processes (Harrison & Klein, 2007; Williams & O'Reilly, 1998). Empirically, cultural diversity research has found predominantly negative effects on team processes (see Section 5.4).

9.1.1 Cultural diversity and workgroup communication

Cultural separation in teams resulted in the expected lower quality of communication. This conforms to research on cross-cultural and intercultural communication that assumes that cultural differences are associated with communication differences in terms of intensity, styles, and effectiveness, but also with regard to meanings and language structures (Gao, 2009; Gudykunst, 2003; Hall, 1976). Furthermore, national and cultural differences are also often associated with different languages (Stahl et al., 2009). From this perspective, it is not surprising that national diversity, although operationalized in the form of variety as a source of potentially valuable resources and competencies, has also shown a negative effect on communication. Even if team members have a shared language to communicate in, a second language may cause misunderstandings and is considered as less rich for information transfer (dependent on the level of proficiency) (Gabriel & Griffiths, 2008; Luring & Selmer, 2011). Thus, a second language seems to hamper the exchange of information (Hambrick et al., 1998). The results of the present research fit well in previous research findings. They conform to results from mathematical decision models by Daim et al. (2012) on communication breakdowns in global virtual teams. Likewise, Schweiger et al. (2003) and DiStefano and Maznevski (2000) found communication problems in global or transnational project teams. In her case study research with culturally diverse teams, Vallaster (2005) also reports irritation between Western and Chinese members stemming from different communication styles and leading to misunderstandings that were further emphasized due to the use of second languages. In line with faultline theory (see Chapter 4.2.3) and similar to the results in the present research, Adenfelt (2010) and Bouncken and Winkler (2010) found that cultural values and communication styles create subgroups between which communication is ineffective.

On the other hand, it was proposed in Hypothesis H1b that cultural variety is associated with a higher quality of communication in teams. Research on cultural variety is theoretically based on information processing and cognition theories, suggesting that team members from a variety of different cultures have different knowledge structures and expertise to contribute and interpret information. The higher variety of knowledge structures and mental frames should increase the amount of different perspectives and views to be communicated within a team. Similarly, Stahl et al. (2010) propose in their conceptual paper that deep-level cultural diversity may actually be an enabler for communication in teams. The positive, but small and non-significant effect from cultural variety on communication found in this research may indicate that this perspective is in fact true. The empirical result conforms to the small and only marginally significant effect found by Stahl et al. (2009) in their meta-analysis. The general positive tendency could be mitigated by simultaneously emerging negative effects from misunderstandings and other problems in cross-cultural communication. Such possible interaction effects in culturally diverse teams could be worth investigating in future studies.

9.1.2 Cultural diversity and task conflict

As suggested by social identity and social categorization theories (Tajfel & Turner, 1986), as well as conforming to predictions from faultline theory (Lau & Murnighan, 1998), this research found small but non-significant evidence that cultural separation increases task conflicts in teams. Only the effect from national diversity, although being operationalized in the form of variety, was marginally significant. This result can be interpreted that nationality became the superordinate determinant of identity (e.g., Earley & Mosakowski, 2000) in nationally diverse teams that separated members from each other. A different explanation resides in information processing and cognition theories, suggesting that national diversity in the form of variety is associated with different cognitive processing and mental representations that lead to conflicts due to different and unpredictable interpretations and (re-)actions (Austin, 1997; Hinsz et al., 1997). This result corroborates predictions by Cox (1993) that various sources of conflict exist in teams with cultural diversity. As in previous case study research with culturally diverse teams (Bouncken & Winkler, 2010; Vallaster, 2005), faultlines between national and cultural subgroups resulted in a higher incidence of conflicts in this study.

In contrast to these results and to what was predicted in Hypothesis H2b, cultural variety was associated with less task conflict, although the effect was too small to reach statistical

significance. This unexpected finding may have resulted from positive social effects and the emergence of proximal relationships within teams with high cultural variety (Lau & Murnighan, 2005). Furthermore, the small positive effect may be explained by the proposition by Hogg and Terry (2000) that conflicts can be moderated by crosscutting demography and with a strategy of cultural pluralism. Crosscutting demography was given in the present study because team members were all students and had similar ages and partly social backgrounds, and those similarities are suggested to mitigate negative effects from social categorization (Hogg & Terry, 2000). Cultural pluralism is considered to lead to balancing subgroup (own culture) with the superordinate group identification. Crosscutting and cultural pluralism are expected to change team members' cognitive representation of the team and its members from separate units to a common ingroup identity (Hogg & Terry, 2000, p.133).

Similarly, Garcia-Prieto and colleagues (2003, p.426) suggest that the salience of social identities influences the cognitive appraisals of conflict issues. They suggest that when team members are separated by salient social identities, the size and importance of conflict issues are perceived to be greater. In addition, a salient social identity is considered to influence the attribution of causality and responsibility for conflicts on the cultural or national outgroup. However, when other team members are considered as belonging to the ingroup, i.e. when in teams with high cultural variety and cultural pluralism the identification with a common ingroup identity is emphasised (see above), then values or norms of other people are rather taken into consideration (Garcia-Prieto et al., 2003). Consequently, conflicts are perceived as less important and threatening when culturally diverse groups are not separated into subgroups, which may explain the negative effect on task conflict. Therefore, differences in points of view and perspectives may have been solved in discussions that were not perceived by group members as conflictual.

9.1.3 Cultural diversity and task reflexivity

In contrast to what was expected, neither cultural nor national diversity directly affected task reflexivity in the present research. Van Knippenberg and Schippers (2007) suggest in their review of workgroup diversity that – because diversity includes different perspectives on the task – team members reflect more upon their goals and strategies to achieve them. This proposition could not be affirmed for cultural diversity in the present research. A possible explanation is the existence of moderating effects. For instance, Schippers et al. (2003) also found no direct effect for workgroup diversity (age, gender, education, and tenure) on task reflexivity. Only when including moderating effects from outcome interdependence and

group longevity, their research has shown significant effects. With increasing group longevity, the positive effect of diversity on task reflexivity turned negative.

Another moderating effect was discovered by Tjosvold et al. (2004). In their study, cooperative versus competitive goals and situations influenced task reflexivity. The emergence of rather competitive situations between subgroups may explain the negative, but non-significant effect of cultural separation on task reflexivity.

An alternative explanation for the non-significant results is based on methodological considerations. Working with a student sample from entrepreneurship courses was associated with teams having structured tasks and goals. In this situation, the importance of collectively reflecting upon goals and approaches or strategies to achieve them could have been diminished. Hence, even highly diverse teams could have relied on the structure given by the course design rather than strongly reflecting about goals and strategies themselves. Put differently, the student teams may have lacked antecedents to reflexivity, as for instance crises or surprise effects.

Or, methodological shortcomings with the task reflexivity scale may have influenced the unexpected non-significant results. Although the scale in this research has previously shown a good composite reliability (Carter & West, 1998; Tjosvold et al., 2004), the Cronbach's alpha in the present research was very low ($\alpha=.64$; increased to .72 after elimination of two items). Furthermore, in contrast to previous findings (Carter & West, 1998), two reverse-coded items did not load significantly on the construct. Because reverse-coded Likert items are associated with high probabilities of misresponse that cause unexpected factor structures and low scale reliabilities, Swain et al. (2008) advise against using reverse-coded items in research. Furthermore, in the light of low factor loadings, the obtained low convergence validity of the construct ($AVE<.50$) is not surprising and conforms to previous results by Carter and West (1998). Under these conditions, the non-significant results in this research need to be interpreted with caution.

Besides the direct effects on task reflexivity, this research assumed an indirect effect from cultural diversity on task reflexivity. It was assumed that communication mediates the relationship between cultural diversity and task reflexivity. Gebert (2004) points to research by Stasser and Titus (1985) that groups decide only based on shared information instead of using all informational resources available to a team. When cultural diversity affects a team's ability to share informational resources, this effect should influence a team's ability to reach a common understanding and integrate them into reflection, plans, and possible courses of action. The mediating effect was partially supported by a marginal negative effect from cultural separation and national diversity. This provides evidence that less spontaneous, frequent, and open sharing of information impedes task reflexivity in culturally and

nationally separated teams. Hence, a lower quality of communication seems to impair reflexivity in teams with high cultural separation and national diversity due to misunderstandings, ignorance, and ethnocentric behaviour.

In sum, these results emphasize the importance of a high quality of team communication in global and multicultural teams that was also postulated in previous research (e.g., Barczak & McDonough, 2003; Earley & Mosakowski, 2000). Cultural separation and national diversity create a context of reinforcing negative group processes. When culture and nationality become the salient social identity that separates team members from each other, team communication is restrained and task reflexivity is lowered.

Because team processes are considered to mediate the relationship between team inputs and outputs according to the IMOI-model of group effectiveness (Ilgen et al., 2005), the next sections interpret and discuss the findings with regard to direct and indirect effects of cultural and national diversity on team creativity and innovativeness.

9.2 Cultural diversity, national diversity, and creativity

The theoretical model for effects on team creativity proposed positive direct effects from national diversity and cultural variety, and negative direct effects from cultural separation mediated by reflexivity, communication, and task conflict.

9.2.1 Direct effects of cultural and national diversity on creativity

Although diversity is often associated with a higher potential for creativity in groups (e.g., Shore et al., 2009), the literature review in this thesis has revealed equivocal results with some studies finding positive (e.g., Punnett & Clemens, 1999), some negative (e.g., Thomas, 1999) and some no significant effects on team creativity (Paletz et al., 2004).

Referring to a cognitive model of idea generation in groups (Nijstad & Stroebe, 2006), this research predicted different patterns for cultural variety and cultural separation. Although the SIAM model was rather intended to explain how the cooperation in groups affects individual and group-level processes in idea generation in contrast to individual idea generation (Nijstad & Stroebe, 2006), this research integrated Nijstad and Stroebe's model (2006) with cultural diversity theories to investigate when and how cultural diversity allows creativity gains.

In line with the predictions from Hypotheses H5, cultural variety and national diversity were found to have positive, while cultural separation had a negative direct effect on creativity in

groups. These findings provide empirical support to the cognitive stimulation hypothesis of the SIAM model (Nijstad & Stroebe, 2006). When cultural and national diversity involve a greater variety of different cognitive styles and contents, as well as more interpretations of problems, the additional and different ideas generated within the team serve as external cues to activate new images in WM. In other words, the cognitive stimulation is higher in teams with high national diversity and cultural variety, because their variety of cognitive styles and contents allows activating more different images in WM, which are used to generate further ideas. Because information about the problem at the start of the creative process is interpreted differently due to (culturally dependent) different thinking modes and knowledge structures, cultural variety and national diversity facilitate processing more divergent information. This, in turn, facilitates the process of developing and considering multiple perspectives and creating more alternatives. Therefore, the empirical results in the present research also provide support to information processing and cognition theories (Austin, 1997; Hinsz et al., 1997).

For cultural separation, this research found a negative effect on idea generation in groups. On the one hand, since cultural separation is highest when a team splits up into two subgroups (Harrison & Klein, 2007), high cultural separation is only associated with low or medium variety of culturally-induced different cognitive structures and contents. Consequently, cognitive stimulation is considered to be lower than in teams with national diversity and cultural variety.

On the other hand, cultural separation is theoretically associated with processes that impede creative performance. While the SIAM model postulates that team members need careful attention to their fellow members ideas for cognitive stimulation (Nijstad & Stroebe, 2006), social categorization and faultline theories predict ingroup-favorism, marginalization and discrimination of the outgroup, and other ethnocentric effects. These effects are considered to hinder a team from capitalizing on any possible diversity advantages. Furthermore, culture shock theory (Ward et al., 2001) proposes cultural separation to induce negative affective responses and create an awkward and stressful environment of higher uncertainty and anxiety that impedes creative performance (Baas et al., 2008).

The empirical results in this research conform to insights from simulation studies with heterogeneous brainstormers (Brown et al., 1998) and to experimental research among cultural diverse dyads by Tadmor et al. (2012). They suggested that multicultural experiences increase the variety of perspectives and ideas from relying less on routine knowledge structures. Empirically, they found an additional gain of dyadic creativity being highest when both partners had high levels of multicultural experiences. The positive

potential from cultural variety and national diversity found in this research also conforms to the general positive effect identified in the meta-analysis by Stahl et al. (2009). At the same time, previous negative results by Watson et al. (1993) and Thomas (1999) are also corroborated in this research.

In sum, the results of the present research highlight that creative outcomes are contingent on the distribution of cultural differences among team members. In this research and in the meta-analysis by Stahl et al. (2009), cultural diversity has proved to have the potential to yield positive and negative effects on creativity. This research shows that the distribution of cultural differences in a team determines which effect prevails. A team composition that includes a variety of different cultural imprints of team members and avoids that culture becomes a feature that separates the team into subgroups seems to facilitate creativity gains in multi-cultural workgroups.

9.2.2 Indirect effects of cultural and national diversity on creativity

Besides the direct effects from cultural and national diversity on creativity, the model also investigated indirect effects through communication, task reflexivity and task conflict in teams. Although communication is required for team members to exchange their ideas and to be cognitively stimulated (Nijstad & Stroebe, 2006), the results show that frequent, informal, and spontaneous communication among team members inhibits their creative performance due to production blocking (Diehl & Stroebe, 1987; 1991). The empirically found direct negative effect from communication quality on creativity supports the perspective that communication distracts team members from the task and blocks them from developing and voicing own ideas. However, a mediating effect could not be affirmed as all indirect effects were found to be small and non-significant. The direct negative effects from national diversity and cultural separation on communication did not systematically influence creativity through team communication. This suggests that a lower team communication quality in culturally and nationally diverse teams does not reduce production blocking effects in creative teams.

De Dreu (2002) and Schippers et al. (2003) suggested a positive effect from task reflexivity on creativity and divergent thinking in teams as this group process is associated with voicing and discussing different ideas and opinions, as well as active thinking modes. Conforming to this perspective, the results of the present research show a generally positive trend. The effect size, however, was too small to reach statistical significance. Again, this result may be explained by methodological limitations of the task reflexivity scale.

The investigation of a hypothesized mediating effect from cultural diversity on creativity through task conflict has shown no systematic results. Task conflict has a small negative, but also non-significant path on creativity. This result is unexpected and contradicts arguments by Bolinger et al. (2009) and results from Nemeth et al. (2004). Nemeth and colleagues (2004) found that debating and criticizing ideas in groups had a non-significant positive trend on idea generation in teams. The negative results of the present research, however, fit well in the production blocking and evaluation apprehension literature (Diehl & Stroebe, 1991). While debate and criticism of ideas may be functional for cognitive stimulation, it still requires time and attention of team members during which they are unable to generate or express own ideas. Furthermore, evaluation apprehension theory (Diehl & Stroebe, 1987) suggests that fearing a negative evaluation of one's ideas by other team members prevents from contributing ideas during the idea generation phase. In this sense, Nemeth et al. (2004) reported that team members informed them about ideas they considered but did not express during brainstorming in the group. The amount of non-expressed ideas was higher under conditions of criticism and debate than under normal brainstorming conditions (p.371).

In addition, Nemeth et al. (2004) tested their hypotheses in two cultures (U.S. and French), delivering similar results and providing an argument for culturally independent effects. In contrast to two culturally homogeneous studies, the situation in teams with cultural and national diversity is different: On the one hand, language and communication difficulties in these teams (see empirical results above and Luring & Selmer, 2011) may hinder an effective debate of generated ideas. This may diminish the possible benefit from task conflict on creativity. On the other hand, cultural differences exist regarding how criticism is articulated (Sanchez-Burks & Lee, 2007) and whether it is perceived as appropriate (Kim, 2005). Criticism can hurt a team member's feelings (Kim, 1993). Above that, attitudes towards interruptions, criticism, jokes, and personal remarks originate from different cultural suppositions and may lead to causing or experience offence between team members (Gabriel & Griffiths, 2008).

In conclusion, whereas task conflict and criticism may be beneficial in general settings, the present results in culturally and nationally diverse teams indicate a rather negative effect during idea generation that may be attributed to cultural and national differences in communication and attitudes towards critique.

9.3 Cultural diversity, national diversity, and innovativeness

9.3.1 Direct effects of cultural and national diversity, and creativity on innovativeness

Building on information processing and human cognition theories (Austin, 1997; Hinsz et al., 1997), as well as from a resource-based perspective (Griffith & Sawyer, 2010a; Richard, 2000), it was argued that cultural variety and national diversity should have a direct and positive influence on innovativeness. Furthermore, it was expected that social categorization processes and the emergence of faultlines decrease the efficiency and consensus in decision making (Salk & Brannen, 2000), impair knowledge development and sharing in teams (Gerybadze, 2003; Müthel et al., 2012; Vlaar et al., 2008), and lower the evaluation capacity of ideas. In combination with destructive team patterns (Bouncken & Winkler, 2010; DiStefano & Maznevski, 2000) and lower creativity (see above), it was expected that cultural separation results in lower innovativeness of the business ideas.

Except for a general positive, but negligibly small effect of cultural variety, none of these hypotheses was confirmed in this research. Furthermore, in contrast to what was expected, creativity in teams was only slightly and non-significantly related to innovativeness. There are several possible explanations for these unexpected results.

A first possibility is that cultural diversity was not related to knowledge development and sharing that is necessary for team innovation (e.g., Murray & Chao, 2005). It would imply that although cultural and national diversity apparently involve a diversity of knowledge, experience and skills, the content of the diverse knowledge was not applicable to the innovative task (Jackson et al., 2003). In contrast to other forms of diversity (e.g., educational or functional diversity), cultural and national diversity may not have matched the requirements of an innovative task.

Innovations require team members to contribute diverse specialized knowledge that is helpful for the innovative activity (Ancona & Caldwell, 1992; Edmondson & Nembhard, 2009; Postrel, 2002). As Gebert (2004) points out, the available stock of specialized knowledge increases the potential for new combinations of ideas and knowledge that may lead to a higher innovativeness of the team. Taylor and Greve (2006) similarly highlight that to successfully come up with innovations, teams need to have access to new knowledge, commitment and significant experience in the knowledge domain. The fact that cultural variety and national diversity were associated with higher levels of creativity (see above) supports the hypothesis of different underlying knowledge structures and cognitive contents of team members that facilitate divergent thinking (see above). The fact that cultural and

national diversity are not related to innovativeness may indicate that the different knowledge structures and cognitive contents from the international and intercultural team composition were not related to an increase in the available stock of specialized knowledge needed for a high innovativeness.

In other words, although cultural variety and national diversity seem to be associated with a broader stock of knowledge and thinking modes, this increased knowledge appears to be less functional in contributing to a higher innovativeness. This phenomenon may be ascribed to the student sample used in the present research, which has an international composition, but lacks specialized practical technological and market experience. In contrast, international and intercultural R&D teams in work settings may in fact contribute task-relevant customer and legislative (Adenfelt & Lagerström, 2006), or specific technological knowledge from dispersed competence centres (Ambos & Schlegelmilch, 2004).

A second explanation for these unexpected results is that diverse teams were not able to use their higher stock of available knowledge to come up with more innovative solutions. Gebert et al. (2010) conceptualize team innovation based on Sheremata (2000) as a function of both knowledge generation and knowledge integration. Knowledge generation describes the degree to which new and useful (i.e., creative) ideas are developed and communicated within the team, while knowledge integration describes how these ideas are combined, evaluated, and prioritized, as well which ways to enact them are considered (Gebert et al., 2010). The authors argue that successful team innovation requires both processes and conceptualize their effects as multiplicative. Building on this conceptualization of team innovation, a second possible explanation for the unexpected non-significant effects of cultural and national diversity on innovativeness resides in possible undetected moderating effects that hinder successful knowledge integration.

For instance, previous research has suggested and shown that individuals hold different beliefs about how a diverse team composition affects team processes and performance, i.e., about the value of diversity for the team (van Knippenberg et al., 2007). Furthermore, research has shown that diversity beliefs moderate the relationship of workgroup diversity on group identification and performance (van Dick et al., 2008; van Knippenberg et al., 2007), as well as innovativeness (Bouncken et al., 2008). Teams were found to be more productive when team members create a positive and socially shared approach to their diversity (van Knippenberg et al., 2007). Furthermore, the moderating effect on innovativeness was argued to stem from a reduced acceptance of diverse members' ideas and knowledge (Bouncken et al., 2008). A possible undetected moderating effect of diversity perspectives on the diversity

to innovativeness relationship was also found by Ostergaard et al. (2011) in firm-level research.

Furthermore, Hüttermann and Börner (2011) propose a moderating effect of transformational leadership on the relationship between (functional) diversity and team innovation. Eisenbeiss et al. (2008) have suggested that transformational leadership creates a shared commitment and supportive behaviour to innovation. In addition, transformational leadership may foster exploratory and critical thinking processes that nurture a risk-taking and innovative environment, while at the same time emphasizing team members' collective interests. Overall, transformational leadership is expected to increase collaboration among team members in idea development and implementation, which could be empirically confirmed.

Similarly, Kearney and Gebert (2009) have shown that national diversity was non-significantly related to team performance (including quality of the innovation) under the condition of low transformational leadership. Only when transformational leadership was high, a positive and significant effect from national diversity on team performance could be observed. Hence, because transformational leadership moderates the relationship between team diversity innovative outcomes, and since this variable was not included in this research, the non-significant results may be due to an undetected moderation.

Besides possible moderating effects from diversity beliefs and transformational leadership, the non-significant paths can be explained by interaction effects with team climate for innovation (West & Anderson, 1996; West & Hirst, 2005). Somech and Drach-Zahavy recently (2011) hypothesized that the effect of team creativity on innovation is moderated by a climate for innovation. They suggested that maximizing conditions that foster creativity (in this research: cultural variety and national diversity) are unlikely to translate directly into a higher innovation. Rather, the extent to which a team's values and norms emphasize and support innovations is a critical contingency factor to translate generated ideas into implementation. They based their arguments on the notion that a team climate for innovation unites members through a joint and precise vision and creates a non-threatening and mutually supportive environment that allows members to take risks. Furthermore, a climate for innovation draws the focus on the task and performance, and creates an open as well as practical work environment. Without a climate for innovation, they hypothesized that team creativity is less likely to translate into innovative outcomes. In line with the results obtained in this research, they found a positive, but non-significant relationship between team creativity and innovation ($\beta = .28$; $p > .05$). Only when considering the interaction with climate for innovation, the effect becomes significant.

A similar moderating effect can have influenced the relationship of cultural and national diversity, as well as creativity on innovativeness. Because cultural separation and national

diversity were found to be associated with lower communication (see above), it is likely that the teams in the present research were lacking the supportive and trustful environment. Furthermore, cultural diversity could be detrimental to developing team norms and values that emphasize and support innovations because of culturally determined differences in tolerance for uncertainty. Hofstede's (1980) cultural dimensions include uncertainty avoidance, which describes cultural differences in stress levels from facing uncertain futures. Innovations are associated with novelty that involves uncertain, unstructured and unknown situations and outcomes (Fagerberg, 2005; Hill & Rothaermel, 2003). Hence, it may be more difficult in culturally diverse teams that members agree on a norm that supports innovations when team members have different levels of uncertainty avoidance. Similarly, Simakumar and Nakata (2003) suggest that high uncertainty avoidance may restrain the willingness to introduce an innovation until it is proven successful in the marketplace.

The results of the present research suggest that knowledge combination and integration within culturally and nationally diverse teams is more difficult than expected based on information processing and cognition theories. In their study of innovative teams, Taylor and Greve (2006) suggest that although diverse knowledge allows the generation of new ideas that drive more radical innovations, the diverse knowledge components provided by team members also increase the uncertainty about the value of each knowledge component, the best way to combine these components, and about the overall innovative output (p.727). Their study shows that diversity in the backgrounds of team members and more experiences do not lead to higher innovativeness, but to a higher variance in innovative performance. Hence, the uncertainty in culturally and nationally diverse teams may not only stem from uncertainties associated with the innovation, but seems to already manifest when team members contribute their diverse knowledge and ideas. In other words, the more different ideas and knowledge contributed by team members are, the higher is the uncertainty regarding its value. Within such a highly uncertain environment, cultural and national diversity with different tolerances for uncertainty may block a successful translation and integration of creative ideas into innovative outcomes.

In addition, Gebert et al. (2010) propose that under conditions of an open action strategy with little or no leadership directives, team members may develop diverging and incompatible team cooperation models which may obstruct knowledge integration. In such situations, team members need time working together to develop a common team identity, a shared mental model (Gebert et al., 2010), and trust (Jarvenpaa & Leidner, 2006; Ochieng & Price, 2010). Previous research has shown that cultural and national differences complicate the formation of trust (Schweiger et al., 2003), and therewith the credibility of knowledge (Moenaert et al., 2000). Adenfelt and Lagerström (2006) found in their case study research

that knowledge development was hampered by a lack of relationships, shared structure and practices within a team, and Lunnan and Barth's (2003) case studies provide evidence for a decreased knowledge integration due to similar process losses. In the same perspective, the present research provides evidence that although cultural variety and national diversity involve higher levels of divergent thinking, it appears that process losses complicate and impede knowledge integration.

From a more abstract perspective, teams in this research faced a situation of decision-making under the condition of distributed knowledge. Teams needed to decide about which of their ideas they were going to enact and on a strategy to implement that idea into the market. When knowledge structures in culturally and nationally diverse teams are diverse, teams have a high degree of unique and unshared knowledge and differences in decision-making styles. Brodbeck et al. (2007a) describe asymmetries in information processing that negatively influence decision-making, which are negotiation focus vs. information pooling, discussion bias, and evaluation bias. Doing-oriented cultures focus on decisions and actions (Maznevski & Peterson, 1997) and focus on negotiation to quickly identify a dominant position, while thinking-oriented cultures rather focus on information pooling. These cultural differences in information processing can aggravate decision-making in culturally diverse teams. Furthermore, the discussion and sampling bias describes that shared information is brought up more often and instantly, as well as repeated more often in discussion than unshared information (Brodbeck et al., 2007a). This bias could be amplified in culturally diverse teams, since hierarchical and high power distance cultures typically restrain from expressing their views, especially when they contradict the apparent group preference (Gabriel & Griffith, 2008). The evaluation bias suggests that shared information and the apparent preference can be socially validated and thus more positively evaluated in teams (Brodbeck et al., 2007a). Because creative and innovative ideas are – by definition – new, uncommon, and deviate from common paths, the likelihood that they can be socially validated in culturally diverse teams can be seen as lower. Hence, the evaluation bias can be seen to favour less innovative ideas, but rather a jointly acceptable compromise. Altogether, in a situation of decision-making with diverse and distributed knowledge in culturally diverse teams, these biases seem to not favour innovative solutions.

In sum, the non-significant effects from cultural and national diversity were unexpected in this research, although they conform to recent findings by Ostergaard et al. (2011) and Somech and Drach-Zahavy (2011). Theoretically, these results contradict information-processing and cognition theories. However, these results can be explained that the increased stock of knowledge was not specific and applicable to the task, by possible undetected moderating effects (attitude towards diversity, transformational leadership, or a climate for

innovation), by process losses that hindered the knowledge integration, and by decision-making biases.

9.3.2 Indirect effects of cultural and national diversity on innovativeness

West (2002a) and Tjosvold et al. (2004) suggested a positive effect from task reflexivity on innovativeness, because reflexivity is conceptualized as an integrative process that involves the development of plans and the analysis of results. Therefore, a mediating effect on innovativeness through task reflexivity was hypothesized. Although a general positive effect from reflexivity on innovativeness was found in previous research (Somech, 2006; Tjosvold et al., 2004), the results in this research were positive, but non-significant. A first possible explanation for this unexpected finding could again be the methodological shortcomings with the scale for task reflexivity used in the present research. Due to the low composite reliability ($\alpha=.64$ before, and $\alpha=.72$ after elimination of items) of the scale, and the insufficient convergence validity ($AVE=.41$), the results need to be interpreted with caution. Besides methodological reasons for the present result, it can be explained by the characteristics of the innovative task in the present research. On the one hand, developing a business plan to introduce an idea into practice is an activity that integrates perspectives, and the planning per se hypothesizes on possible outcomes of actions, risks, and alternative strategies. Therefore, the team task includes a good part of the conceptualization of reflexivity by providing the team with a conceptual readiness to introduce an innovation (West, 2002a). Therefore the task itself may have absorbed possible effects on innovativeness.

Furthermore, reflexivity in terms of interpreting outcomes of actions and possible modifications for future team strategies requires extensive feedback and reactions from the market, from investors, and possible cooperating partners. As this research covers only the first part of the innovation process, the lacking interaction with the market and missing technological or organizational difficulties in realizing the ideas may explain why reflexivity did not show an impact.

In accordance with the formulated hypotheses, team communication and task conflict have shown positive effects on innovativeness. The empirically found positive effect from communication on innovativeness conforms to previous research by Högl and Gemünden (2001), Moenart et al. (2000), and Monalisa et al. (2008). On the one hand, communication seems to smoothen work processes (see results for team processes above and Monalisa et al., 2008)) and create a cooperative atmosphere (Barczak & McDonough, 2003) as well as a shared identity (Hinds & Mortensen, 2005). On the other hand, it supports team members to

recombine their knowledge and increase the quality of the solution (Gebert, 2004). A mediating effect by communication on the relationship between cultural diversity and innovativeness could, however, not be confirmed. The bootstrapping procedure has shown a small and non-significant effect. This result may also be due to the small sample size in this research.

Task conflict was found to be positive for innovativeness in teams. This result provides empirical support for Jehn and Bendersky's (2003), de Dreu and Weingart's (2005), as well as Tjosvold's (1997) perspective that task conflict is beneficial as it allows exchanging perspectives, scrutinizing a problem, and a deeper understanding of issues, especially in innovative tasks with high complexity and uncertainty (De Dreu & Weingart, 2003). Testing a mediating effect on the relationship between cultural diversity and innovativeness has shown a small, but non-significant result. Hence, this research could not affirm that higher task conflicts in teams with national diversity and cultural separation systematically increase the innovativeness. This unexpected effect, however, may also be explained by the low sample size in this research.

Overall, the present research suggests team members need a high quality of communication to exchange their perspectives and ideas, as well as a critical examination and discussion of possible solutions. However, since cultural and national diversity and creativity were not significantly related to innovativeness, it seems that teams have difficulties to integrate their diverse knowledge structures and translate their creative potential into innovative outcomes.

9.4 Theoretical contributions

The theoretical discussions and empirical findings in this thesis contribute to advancing knowledge for research and practitioners. In this section, the main contributions to literature, and practical implications, are elaborated. Furthermore, limitations that offer avenues for future work are pointed out.

9.4.1 Contributions to diversity and group research

This research contributes to diversity literature in several ways. First, the results highlight the methodological contributions of the present study. The theoretical differentiation of forms of diversity by Harrison and Klein (2007) is empirically supported in this research. By showing that cultural separation and cultural variety have different and opposite effects on

team processes and creativity, the theoretical differentiation between the composition of diversity variables and their underlying scale levels and measurement formulae is empirically backed up by this research. Furthermore, this research extends the theoretical arguments by Harrison and Klein (2007) arguing that common measurement formulae (SD or ED, Blau's Index) for diversity forms are unable to reliably discern the underlying distribution of diversity characteristics in teams. Because diversity (for instance with regard to gender see Harrison & Klein, 2007) can take on different forms of variety, separation, and disparity, the present research measured cultural variety and separation simultaneously to discern their differentiated effects.

Second, diversity theories have argued that diversity characteristics can produce negative (social categorization, negative affective and evaluative reactions) and positive effects (elaboration of task relevant information and perspectives, higher creativity) at the same time (van Knippenberg et al., 2004). This theoretical reasoning was empirically confirmed in the present research. Although national diversity was operationalized as variety, it led to negative (lower quality of team communication) and positive effects (more task conflict, higher creativity). These effects confirm two basic assumptions of this research: First, since national diversity has widely shown opposite effects on team processes than cultural variety, the nominal-scaled attribute of nationality is not a suitable proxy for culture in diversity research. While much prior research has used surface-level, categorical variables (ethnicity, race, gender, nationality) to study cultural diversity, this research approached diversity at the deep-level of individual cultural value orientations. Although it may be tempting to use easily obtainable demographic attributes that evoke social categorization processes, the fact that - particularly over longer periods of collaboration - the effects of surface-level diversity diminish, while those of deep-level diversity grow (Harrison et al., 2002) already speaks against equalizing surface-level with deep-level diversity attributes. The present findings that national diversity, although being operationalized and measured in a similar way (by Blau's inequality index) as cultural variety, had opposite effects on team processes, provides another argument against equalizing deep-level cultural with national diversity.

Second, because national diversity can be theoretically operationalized as separation (as a superordinate determinant of identity, c.f. Earley & Mosakowski, 2000) and as variety (potentially valuable of experiences and perspectives, c.f. Kearney et al., 2009), assessing only a single form of diversity (here: variety with Blau's index) does not allow to reliably discern the distribution of diversity within teams.

Furthermore, van Knippenberg et al. (2004) have highlighted the relevance of comparative fit for effects of diversity. The comparative fit describes the extent to which the distribution

of diversity results in subgroups with high intragroup similarity and high intergroup differences. This research has argued that high cultural separation, but lower cultural variety describe a group composition that makes the emergence of subgroups with high intragroup similarity and intergroup differences more likely (high comparative fit). In contrast, the comparative fit should be lower in teams with high cultural variety but lower cultural separation, because the cultural differences in those groups are more broadly and evenly distributed. The fact that the combination of both forms of cultural diversity within the same empirical model (e.g., for effects on creativity) allows discerning their differentiated effects indicates that comparative fit is subject to the underlying form of diversity and its measurement (Harrison & Klein, 2007), as well as that comparative fit may be operationalized by measuring both forms of diversity in the same empirical model.

This finding also contributes to cultural diversity literature by showing that the form of diversity accounts for inconsistent and mixed results found in previous cultural diversity research. When a team is composed of members with various different cultural orientations instead of rather culturally homogeneous subgroups, creative performance is similar as found in previous research (McLeod & Lobel, 1992; Punnett & Clemens, 1999). Yet, when cultural separation is high, the team composition yielded negative effects on creativity as found in previous research (Thomas, 1999; Watson et al., 1993). Moreover, the present research extends findings by Tadmor et al. (2012) among dyads. They have shown that multicultural experiences (as indicators for cultural diversity) had a superadditive effect on creativity in brainstorming groups. Beyond their research among dyads, this research has shown that an increased creativity can be found in nationally and culturally diverse teams.

In a more abstract way, the present research contributes to diversity literature by corroborating Jackson et al.'s (2003) differentiation between task-related and relations-related diversity attributes. In their taxonomy, cultural and national diversity fall into the category of relations-related diversity. Jackson et al. (2003) suggest that relations-related diversity attributes may shape interpersonal relationships but usually do not have a direct bearing on performance. Although expected differently in the formulated hypotheses, this research found significant effects on variables that capture interpersonal relationships (communication, conflict), while the effects on team reflexivity and innovativeness were small and non-significant.

9.4.2 Contributions to creativity and innovation research

Since teamwork is common in innovative activities and involves an increasingly international and cross-cultural team composition (Edmondson & Nembhard, 2009; Matlay & Westhead, 2005; Mudambi et al., 2007), the present research contributes to workgroup creativity and innovativeness literature in various ways.

First, the present research has found strong direct effects from cultural and national diversity on creativity (divergent thinking), but these effects did not translate into effects on innovativeness and team performance. The gap between creativity and innovativeness was interpreted as resulting from lacking applicability of the diverse knowledge to the task or as due to difficulties in knowledge integration within culturally and nationally heterogeneous teams. Theoretically, knowledge generation (developing new and useful ideas) and knowledge integration (using ideas by combining them and finding ways to put them into practice) are discerned as two different processes – but both are needed for team innovativeness (Gebert et al., 2010). In line with previous results (Taylor & Greve, 2006), this research suggests that access to diverse knowledge is a necessary but not sufficient condition for team innovativeness. Other factors that foster the deep understanding of that knowledge, integrative processes and a climate for innovation (Eisenbeiss et al., 2008; Somech & Drach-Zahavy, 2011; Taylor & Greve, 2006) are required to facilitate the integration of knowledge and a team's ability to innovate. With regard to the innovation process, the current findings suggest that nationally and culturally diverse teams should be predominantly applied in the very early phases of the innovation process to develop ideas for innovative products and services. For later phases of knowledge integration, decision-making on which ideas to enact, and a structured approach towards idea implementation, a culturally and nationally diverse team composition seems to be less effective. In addition, national diversity and cultural separation led to a lower quality of team communication that may further exacerbate innovative performance.

Second, after the phase of idea generation (in particular the generation of business ideas) follows a period of evaluation and selection (Guilford, 1950; Nijstad & De Dreu, 2002; Paulus, 2002; West, 2002a). In this regard, diverse knowledge and creativity only provide the “raw material” which needs to undergo selective and elaborative processes before being enacted (Cummings & Oldham, 1997; Ward, 2004). However, the present research found that highly creative teams were not able to translate their enhanced creativity into higher innovativeness of the ideas they selected for their business plan. The present research highlights the importance of choice between possible opportunities in team settings. Diversity in knowledge (e.g., from cultural and national diversity) seems to induce

difficulties in decision making (Brodbeck et al., 2007a) and may inhibit the enactment of creativity (Ward, 2004). While cultural and national variety were found to be beneficial for divergent thinking and the generation of ideas, they were less beneficial or even destructive in the processes of evaluation and selection, both of which are associated with convergent thinking (Hennessey & Amabile, 2010). Brown et al. (1998) associate divergent thinking with jumping between topics and using the available breadth of information, while convergent thinking is associated with sticking to one topic and using deep information. A positive effect from cultural and national diversity on divergent thinking seems logical, because those team compositions yield broader knowledge and information (Dahlin et al., 2005). A less positive, or even negative effect on convergent thinking could stem from a lower depth of information. Empirically, Dahlin et al. (2005) found a negative curvilinear relationship for depth and organization of knowledge in nationally diverse teams. From moderate levels of variety in teams, depth and organization of knowledge were found to strongly decline. In combination with the present findings, it can be assumed that high cultural and national variety foster divergent thinking due to an increased breadth of information, but inhibit convergent thinking due to a missing depth and organization of information.

9.5 Practical implications

Beyond the theoretical contributions, the present research has multiple implications for practice. Most important, when working with newer forms of teamwork in organizations that include a degree of cultural diversity, the present research suggests that managers should focus on a team composition that fosters cultural variety instead of separation. To obtain smoother team processes and higher creativity, teams should be designed to display a wide range of different cultural and national imprints that mitigate the emergence of social categorization processes (Hogg & Terry, 2000) and yields a lower comparative fit (van Knippenberg et al., 2004). In brief, managers should actively try to integrate multiple cultural perspectives but avoid forming teams consisting of culturally distant and equally powerful subgroups.

Furthermore, as this research has shown that communication is beneficial for task reflexivity and innovativeness, the importance of establishing functional team communication in culturally and nationally diverse teams needs to be highlighted. In line with previous research (Barczak & McDonough, 2003; Monalisa et al., 2008; Ochieng & Price, 2010; Vallaster, 2005; Vlaar et al., 2008), this research emphasizes the role of communication to create positive social and affective outcomes from working in cross-cultural and

multinational teams, e.g. to avoid misunderstandings, insecurity and dislike between members, as well as to foster social integration, formation of trust and relationships, generation of a shared understanding, as well as for cognitive processing and knowledge sharing. However, because previous research has argued that communication is also associated with cultural separation and making cultural differences salient between members (French, 2010; Gudykunst, 2003), managers should bear in mind that a more formal form of communication at the beginning of the teamwork is considered as helpful (Janssens, 2006; Moenaert et al., 2000). More formal communication may encourage members to do more individual preparation, re-read aspects that were not understood in face-to-face meetings and, most importantly, may reduce the power of the 'voice' of dominant team members (Gabriel & Griffiths, 2008). Those members, for whom verbal language skills and culture make group communication difficult, may thus benefit from a stronger formal communication.

In addition, communication and task conflict were found to positively influence team innovativeness but negatively creativity. This suggests that managers should focus on electronic brainstorming methods when trying to find many high quality ideas in order to avoid possible production blocking effects. Yet, when critically evaluating alternatives, the more consultative interaction and intellectual challenge can lead to a more accurate perspective of the situation and a better problem solving.

Eventually, this research has found a positive effect from cultural variety and national diversity on creativity that did not translate into more innovative and better ideas. This positive effect on divergent thinking and idea generation allows suggesting that for finding business opportunities and innovative solutions, managers should not only look at functional expertise when composing project teams. In the idea generation phase of the innovation process, cultural and national variety seems to further contribute to team effectiveness. Yet, the missing effects on innovativeness suggest that the creative advantage is resolved by difficulties in decision-making, knowledge integration, and a structured approach to translate an idea into practice. Hence, the benefit from variety in cultures and nationalities may depend on the phase of innovation process. In later phases of idea evaluation and selection, it could be beneficial to focus on task-related diversity (Jackson et al., 2003), by establishing functional diversity or diversity in industry experience. In terms of team processes, managers are advised to focus on transformational leadership (Eisenbeiss et al., 2008; Kearney & Gebert, 2009), the creation of a positive attitude towards diversity (Bouncken et al., 2008), and a climate for innovation (Somech & Drach-Zahavy, 2011; West & Hirst, 2005). These

effects were found to moderate team innovativeness and may account for the missing effects in the present research.

9.6 Limitations and avenues for further research

9.6.1 Methodological limitations

The present research has several limitations and offers multiple paths for the future research. Methodologically, a limitation of the study is associated with the student sample. On the one hand, the student sample allowed access to a large sample size (for workgroup and diversity research) that permitted analysing several highly complex models with structured equation modeling. Furthermore, cultural and national diversity and their effects are rather fundamental topics that reside within basic characteristics of human nature. Therefore, a student sample can be considered as appropriate (Bello et al., 2009). In addition, Oyserman et al. (2002) have found that most studies on cultural differences are based on student samples and that no differences between student and adult samples exist. However, because student samples have higher educational levels and often stem from specific socio-economic backgrounds, it is probable that their cross-cultural imprints are not representative for the larger population. Therefore, it was advantageous that this research measured cultural value orientations at the level of individual team members.

On the other hand, the student sample and data collection within entrepreneurship education modules constitute a limitation regarding the transferability of findings for firm innovation. Student teams operate in a distinct community and in an educational system, which may call the transferability of the model and results to other contexts into question. For instance, in international or global R&D organizations, differences in knowledge structures and thinking modes may not only stem from cultural differences, but also from implicit specialized knowledge about market requirements (Lagerström & Andersson, 2003) necessary for local adaption of products or processes (e.g., Nobel & Birkinshaw, 1998). Or, cultural and national differences involve differences in specialized knowledge from tapping into new local knowledge (Hegde & Hicks, 2008) as in global centers of excellency (Chiesa, 2000). Knowledge specialization, e.g. in geocentric centralized R&D facilities, global networks or R&D hubs (Gassmann & Zedtwitz, 1999), that is aligned with national and cultural differences could not be covered by this research.

Associated with the student sample are limitations in the scope of the research, the availability of performance criteria and from the cross-sectional design. This research only

covered the early phases of the innovation process from idea generation to the development of a complete business plan to introduce the idea into practice. Other activities along the innovation process, as e.g. construction, development, and testing of a technological solution, and phases in which the idea is stabilized and adapted to the organizational context (West, 2002a) and to market requirements could not be covered. Also, more objective performance criteria for team outcomes (e.g. the quantity of innovations introduced into the market or actual performance and impact of products or services on the market) could not be assessed. To account for these limitations, future research is encouraged to investigate the distinct effects from informational diversity and cultural diversity within global R&D teams on the performance of innovations introduced within organizations. The cross-sectional design of this study, where cultural diversity and outcome measures were determined at one point in time, involves a main limitation regarding the causalities of the observed relationships (Easterby-Smith et al., 2002). The reasons why the observed patterns in this study exist have not been tested longitudinally but are interpreted based on theoretical considerations. Future research is therefore encouraged to investigate cultural diversity in creative and innovative teams along the innovation process using a longitudinal design.

Further methodological limitations of the present study are due to measurements used in the present research. The CPQ4 (Maznevski et al., 2002) that was used to assess differences in individual cultural value orientations was the only applicable research instrument that could be identified. Although it is advantageous that this instrument was validated across various cultural clusters (Maznevski et al., 2002), some weaknesses of the CPQ4 that were identified in previous studies were replicated in the present research. Several scales have shown extremely low composite reliabilities and needed to be discarded. Furthermore, the indicator reliabilities, factor loadings and composite validity of CPQ4 scales were found to be rather low. These difficulties may stem from measurement problems of assessing cultural values at the individual-level (Jagodzinski, 2004). Besides these limitations that are brought about by the CPQ4, the availability of a single instrument for assessing cultural values at the individual-level (compared to at least 121 instruments at national- or society-level, Taras et al., 2009) points to the need for further research and scale development. However, since studies on culture in teams has largely focused only on the individualism/collectivism values across team members (Zhou & Shi, 2011), it is a strength of the present research that six dimensions of cultural value orientations were included.

Similar to some scales of the CPQ4, task reflexivity had a low composite reliability and convergence validity in the present research. Furthermore, although team communication had a marginally insufficient r_{wgi} (0.69), data was still aggregated at the team level and

analysed (as done by Schippers et al., 2003). In both cases, some caution is needed when interpreting the results.

A last methodological limitation of the present research is associated with using PLS for data analysis. PLS currently only allows studying linear relationships and interactions (Albers & Hildebrandt, 2006, p.28). Curvilinear relationships that have been found in previous diversity literature (e.g., Dahlin et al., 2005) could not be accounted for in the present research. Future research is encouraged to further investigate non-linear effects of cultural separation and variety.

9.6.2 Conceptual limitations

Besides the methodological limitations, the present study has conceptual limitations that indicate avenues for future research. The present study includes two forms of cultural diversity and national diversity as exogeneous variables. Because surface-level diversity was found to have different and more immediate effects than deep-level diversity (e.g., Harrison et al., 2002), future research is encouraged to extend the scope of diversity attributes and integrate additional surface-level diversity scales to further investigate the interplay between surface- and deep-level diversity.

In the light of newer forms of teamwork that cross boundaries of time zones, geography, languages, and communicative media from information technologies (Espinosa et al., 2003), this study focused only on cultural differences as one form of barrier that needs to be overcome in teamwork. Future research on global virtual teams could extend contrast effects of cultural diversity with additional effects from virtuality and global dispersion of team members.

In addition, this research has unexpectedly shown that positive effects on creative performance did not translate into a higher innovativeness. This calls for future research in several directions. Because the effects of cultural and national diversity may depend on the phase in the innovation process, future research could use a longitudinal design to investigate how cultural and national diversity impact team innovativeness from idea development over start of production to market introduction. Sivakumar and Nakata (2003) have also argued that cultural dimensions impact the stages of development and overall new product development success differently. They indicate that high degrees of individualism may facilitate initiation and variety of alternative product concepts, but may also be counterproductive during implementation, when a team works rapidly towards market introduction.

Furthermore, scholars are encouraged to investigate possible moderation effects from diversity climate or attitudes (e.g., Bouncken et al., 2008), transformational leadership (e.g., Kearney & Gebert, 2009), and a climate for innovation (Somech & Drach-Zahavy, 2011) that may influence the translation of creative ideas into innovative products.

Lastly, team effectivity models have studied a wide range of processes that mediate the transformation from inputs into outputs, often discerned as cognitive, motivational, social, and affective processes or emergent states (Marks et al., 2001). While this research has concentrated with reflexivity, communication, and task conflict on cognitive and social aspects, there are further highly relevant variables that influence teamwork (Salas et al., 2005). Future research is encouraged to investigate the interplay of the five dimensions of teamwork in culturally diverse groups, as well as to include further cognitive (e.g., team identification), motivational (e.g., team climate for innovation), and affective (relationship conflict) processes. For instance, Kerr and Tindale (2004) describe in their review of team performance research cultural differences as antecedents to motivation losses in workgroups, where individualism seems to be associated with a stronger social loafing tendency. Gabriel and Griffith (2008) point to situations in cross-cultural teams, in which communication difficulties were mistaken for free-riding behaviour. On the other hand, people are often eager to interact and work with people from other countries and cultures (Gabriel & Griffiths, 2008). Stahl et al. (2010) suggest a positive motivational and affective response to working in culturally diverse teams that may stem from curiosity, excitement, and making new experiences. Hence, investigating the interaction between affective and motivational processes in cultural diverse teams could be a fruitful path for future research.

9.7 Conclusions

This research aimed at advancing the understanding of how a culturally diverse composition affects teams' creative and innovative performance. It was criticised that previous research on cultural diversity has frequently applied the categorical variable of nationality as a proxy for culture. The present research provided empirical support for this criticism by showing that national diversity behaves differently in nomological networks and across team contexts. Furthermore, the inconsistent effects of cultural diversity across studies have often been criticised. Cultural diversity, and many other diversity forms, have been described as a double-edged sword. The present research addressed the inconsistencies by proposing and testing models that distinguish cultural variety and cultural separation as two forms of cultural diversity. It could be demonstrated that the notion of how diversity attributes are

distributed in teams, and which scale levels and measurement formulae are used to assess diversity indices, account for inconsistent and opposite effects, which have been obtained in previous studies. Hence, this research supports the notion that cultural diversity has the potential to yield positive and negative effects, but refines previous diversity research by showing that the outcome depends on the form of diversity that prevails within teams.

Cultural diversity has often been considered as facilitating creative and innovative outcomes. Furthermore, it is associated with newer forms of teamwork, which are increasingly used for innovative activities in organizations. The empirical results in this thesis indicate that cultural variety is beneficial in creative and innovative teams for idea generation and divergent thinking, but other approaches are required for knowledge integration, idea selection, and convergent thinking. Furthermore, when culturally diverse teams aim at establishing a cooperative environment, the high relevance of communication quality as an ancillary team process needs to be emphasized. Team communication was found to enable team reflexivity.

Overall, this research provides further evidence that – due to economic globalization – culture has become a relevant diversity attribute in innovation management research. In particular, it could be shown that besides commonly studied task-related diversity attributes, the relations-oriented and deep-level attribute of culture has the potential to facilitate idea generation and creativity. Organizations can benefit from a creativity gain in teams with cultural variety, but also need to effectively cope with negative effects of cultural diversity when translating creative ideas into innovative outcomes.

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Appendices

Appendix 1: Overview of cultural diversity studies.....	259
Appendix 2: Operationalization and measurement of cultural diversity.....	261
Appendix 3: English Questionnaire	262
Appendix 4: German Questionnaire.....	274
Appendix 5: French Questionnaire.....	285
Appendix 6: Spanish Questionnaire.....	296
Appendix 7: MVA in SPSS (original output)	308
Appendix 8: Results of the CFA for “activity” orientation.....	311
Appendix 9: Results of the CFA in PLS for "Relationships among people" orientation.....	312
Appendix 10: Results of the CFA in PLS for "Relation to environment" orientation	313
Appendix 11: Results from CFA in PLS for "Human Nature” orientation.....	314
Appendix 12: Results for the CFA in PLS for the six dimensions of the CPQ4.....	315
Appendix 13: Original SPSS output for multicollinearity test of innovativeness.....	316
Appendix 14: Original PLS output for external validity test of innovativeness	317
Appendix 15: Original PLS output for team processes.....	318
Appendix 16: Original PLS output for creativity.....	319
Appendix 17: Original PLS output for innovativeness 1	320
Appendix 18: Original PLS output for innovativeness 2	321
Appendix 19: Original SPSS output for multicollinearity test of structural models.....	322

Appendix 1: Overview of cultural diversity studies

Author(s)	Sample	Culture operationalized by	Scale Level	Dependent Variable(s) and Main Results
Cox et al. (1991)	N=136 Students	Ethnicity	Nominal Scale	Cooperative Behaviour (positive)
Tsui et al. (1992)	N=151 Work Units	Race, Gender	Nominal Scale	Psychological Attachment (negative)
Watson et al. (1993)	N=173 Undergraduate Students	Ethnicity, Nationality	Nominal Scale	Range of Perspectives (negative/positive) Alternatives Generated (negative/not significant), Quality of Solutions (negative/positive); Overall Performance (negative/not significant)*
Elron (1997)	N=259 Team members	Nationality / Value Dimensions (Hofstede)	Nominal Scale	Perceived Performance (positive mediated by task-related conflict)
Watson et al. (1998)	N=449 Undergraduate Students	Nationality, Ethnicity	Nominal Scale	Performance (positive/negative)*
Jehn et al. (1999)	N=545 Employees	Perceived Differences	Ordinal Scale	Conflict (negative)**, Effectiveness (negative), Efficiency (negative)
Pelled et al. (1999)	N=45 Teams	Race, Gender	Nominal Scale	Emotional Conflict (negative)**, performance (not significant)
Punnett & Clemens (1999)	N=38 student teams	Nationality	Nominal Scale	Time for decision making (negative), number of options (positive)
Thomas (1999)	N=24 student teams	IND / COL	Ordinal Scale	Performance in case studies (negative)
Earley & Mosakowski (2000)	N= Executive Students	Nationality	Nominal Scale	Performance (curvilinear)
DiStefano & Maznevski (2000)	Case studies	n.a.	n.a.	Three models of intercultural teams (destroyers, equalizers, and creators), describe how successful creators manage their differences by mapping, bridging and integration
Maznevski & Chudoba (2000)	Case studies – grounded theory	Nationality, cultural value dimensions	n.a.	Professional and cultural diversity increase complexity of communication, moderated by shared view and relationships
Ely & Thomas (2001)	3 Case Studies	Race, Gender, Social Class, Sexual Orientation, Religion, Nationality	Not Applicable	Performance (mediated by diversity perspective in group; integration- and learning perspective to yield positive consequences; access-and legitimacy perspective and discrimination-and fairness perspective negative outcomes)
Govindarajan & Gupta (2001)	N=70 Teams	n.a.	n.a.	Only 18 % of cross-border teams were highly successful, others fell short

Author(s)	Sample	Culture operationalized by	Scale Level	Dependent Variable(s) and Main Results
Schweiger et al. (2003)	N=9 case studies	n.a.	n.a.	Culture as a source of interpersonal conflict and barrier to communication, but also potential to bring new and innovative ideas, hinders interaction and fosters dislike and distrust, political means to stop cooperation
Lunnan & Barth (2003)	Case study	n.a.	n.a.	Increase potential for new knowledge, but also the likelihood of process losses
Richard et al. (2004)	N=153 Teams	Nationality, Gender	Nominal Scale	Productivity (curvilinear)
Kirkman & Shapiro (2005)	N=34 Teams	Cultural Value Orientations	Ordinal Scale	Productivity (doing orientation negative, determinism positive)
Staples & Zhao (2006)	N=79 student teams	IND / COL (Hofstede), Nationality	Ordinal Scale	Cohesion (negative), Conflict (negative), satisfaction (negative), performance (n.s.)
Kankanhalli et al. (2007)	N=3 case studies	IND, Language and Nationality	n.a.	Cultural diversity increases task and relationship conflict
Hardin et al. (2007)	N=243 students	IND/COL (Hofstede)	Ordinal Scale	Differences in self-efficacy between individualist and collectivist members in virtual teams
Crown (2007)	N=45 teams	IND/COL	Ordinal Scale	Group goals increase task performance for homogeneous collectivist and heterogeneous teams, culturally diverse teams outperform others when group and group centric goals are combined
Tyran & Gibson (2008)	N=54 teams	COL	Ordinal Scale	Group efficacy and reputation (positive)
Shachaf (2008)	N=41 members (qual)	n.a.	n.a.	Difficulties in communication (+), moderated by use of ICT, Cultural diversity affects media choice
Monalisa et al. (2008)	N=8 case studies	n.a.	n.a.	Difficulties from cultural differences (+)
Li (2010)	N=41 Employees	Nationality	Nominal Scale	Different thinking logic between Chinese and American employees
Bouncken and Winkler (2010)	N=6 case studies	Own scale of cultural value items	Ordinal Scale	Diversity types depend on team configuration; high faultline strength leads to conflict (+) and lower innovativeness (-)
Ochieng & Price (2010)	N=20 interviews	n.a.	n.a.	Cross-cultural communication important for cooperation and formation of trust in diverse teams.
Daim et al. (2012)	Mathematical model	n.a.	n.a.	Cultural diversity negative on cooperation and communication, hence effectiveness (-)

Notes: * Watson et al. (1993) and Watson et al. (1998) conducted longitudinal studies. Formerly quoted results were obtained at an initial stage, latter results at a final stage of their observation.

** Negative results for conflict refer to strong conflict observed in the team.

Appendix 2: Operationalization and measurement of cultural diversity

Author(s)	Diversity conceptualization	Diversity measurement	Independent Diversity Variable(s)	Scale Level	Dependent Variable(s) and Main Results
Cox et al. (1991)	n.a.	Mixed Team Design	Ethnicity	Nominal Scale	Cooperative Behaviour (positive)
Tsui et al. (1992)	Separation	Euclidean Distance	Race, Gender	Nominal Scale	Psychological Attachment (negative)
Watson et al. (1993)	Separation (initial) vs. variety (long-term)	Mixed Team Design	Ethnicity, Nationality	Nominal Scale	Range of Perspectives (negative/positive) Alternatives Generated (negative/not significant), Quality of Solutions (negative/positive); Overall Performance (negative/not significant)*
Elron (1997)	Separation vs. variety	Coefficient of Variation	Nationality / Value Dimensions	Nominal Scale	Perceived Performance (positive mediated by task-related conflict)
Watson et al. (1998)	n.a.	Mixed Team Design	Nationality, Ethnicity	Nominal Scale	Performance (positive/negative)*
Jehn et al. (1999)	Separation	Teachman Index	Perceived Values	Ordinal Scale	Conflict (negative)**, Effectiveness (negative), Efficiency (negative)
Thomas (1999)	Separation vs. variety	Euclidean Distance	COL	Ordinal Scale	Performance in case studies (negative)
Pelled et al. (1999)	Separation, variety, and disparity	Teachman Index	Race, Gender	Nominal Scale	Emotional Conflict (negative)**, performance (not significant)
Punnett & Clemens (1999)	Separation vs. variety	Mixed Team Design	Nationality	Nominal Scale	Time for decision making (negative), number of options (positive)
Earley and Mosakowski (2000)	Separation vs. variety	Mixed Team Design	Nationality	Nominal Scale	Performance (curvilinear)
Richard et al. (2004)	Separation vs. variety	Blau's Index	Nationality, Gender	Nominal Scale	Productivity (curvilinear)
Kirkman & Shapiro (2005)	Separation vs. variety	Standard Deviation	Cultural Value Orientations	Ordinal Scale	Productivity (doing orientation negative, determinism positive)
Staples & Zhao (2006)	Separation vs. variety	Mixed Team Design (Standard deviation)	IND / COL (Hofstede)	Ordinal Scale	Cohesion (negative), Conflict (negative), satisfaction (negative), performance (n.s.)
Tyran & Gibson (2008)	Separation vs. variety	Standard Deviation	COL	Ordinal Scale	Group efficacy and reputation (positive)

Appendix 3: English Questionnaire

Questionnaire

Dear Sir or Madam,

Thank you for participating in our study on culture and group dynamics. This questionnaire includes several questions related to cooperation in your business planning team and is divided in three sections. The first section includes questions on group dynamics in your business planning team. The second section asks questions concerning value orientations. The third and last section comprises a number of demographic questions.

Please bear in mind that there are no “right” or “wrong” answers – it is purely your opinion that counts.

We assure you that all data from the questionnaire are treated and kept anonymously.

Thank you very much for your cooperation.

In order to be able to attribute your answers to your team, we only require your team name.

Team Name: _____

Section 1: Work Situation

In this section, you are confronted with several statements or questions that deal with the work situation in your team. Please mind that there are no wrong or inappropriate answers since the statements aim at assessing your personal perception of the cooperation in your team.

Please rate the following statements on a scale between 1 (complete disagreement) and 5 (complete agreement).

	Statement	I disagree		Rating	I agree	
TR6	How well we communicate information was often discussed	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO10	The team members were happy with the usefulness of the information received from other team members.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR2	We regularly discussed whether the team is working effectively together	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR5	Team strategies were rarely changed	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO3	The team members communicated mostly directly and personally with each other.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO6	Important information was kept away from other team members in certain situations.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO4	There were mediators through whom much communication was conducted.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO8	The team members were happy with the timeliness in which they received information from other team members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR1	The team often reviewed its objectives	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR4	In this team we modified our objectives in light of changing circumstances	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO5	Project-relevant information was shared openly by all team members.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO9	The team members were happy with the precision of the information received from other team members.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO2	The team members communicated often in spontaneous meetings, phone conversations, etc.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

TR8	The way decisions are made was rarely altered	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO7	In our team there were conflicts regarding the openness of the information flow.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR7	The team often reviewed its approach to getting the job done.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR3	The methods used by the team to get the job done were often discussed	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO1	There was frequent communication within the team.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Please indicate for the following questions the occurrence on a scale between 1 (None) and 5 (A lot).

	Question	None	Rating				A lot
TC2	How frequently did you have disagreements within your work group about the task of the project you are working on?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
TC3	How often did people in your work group have conflicting opinions about the project you are working on?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
TC1	How much conflict of ideas was there in your work group?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	

Section 2: Value Orientations

In this second section, you are presented with several statements concerning various situations relevant to how you interact with people and the world around you.

Please rate the following statements on a scale between 1 (complete disagreement) and 7 (complete agreement) indicating the extent to which you agree with each one of them.

	Statement	I completely disagree	Rating					I completely agree
PCo8	One's responsibility for family members should go beyond one's parents and children.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS3	Whatever is going to happen will happen, no matter what actions people take.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH7	People at lower levels in the organization should not have much power in organizations	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH5	People at lower levels should carry out higher level requests without questions.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT3	People should always think carefully before they act	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH7	It is important to achieve balance among division and units within an organization	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD9	People who work hard deserve a great deal of respect	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI6	We should try to avoid depending on others	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT6	A logical argument is as persuasive as visible evidence that something will work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM3	With enough knowledge and resources, any poor-performing business can be turned around	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT2	All business decisions should be analyzed from every possible angle before they are implemented	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS6	One's success is mostly a matter of good fortune	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		<div> <div>I completely disagree</div> <div>Rating</div> <div>I completely agree</div> </div>						
PCo7	Every person on a team should be responsible for the performance of everyone else on the team	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT4	Even if it takes more time, business decisions should always be made based on analysis, not intuition	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH3	Employees should be rewarded based on their level in the organization	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD10	One should live to work, not work to live	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH4	Many of the world's problems occur because of our attempts to control the natural forces in the world	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo1	The performance of one's workgroup or unit is more important than one's own individual performance	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM2	Given enough time and resources, people can do almost anything	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB4	You shouldn't worry about working hard when you don't feel like it	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS1	People should not try to change the paths their lives are designed to take	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT8	No matter what the situation, it is always worth the extra time it takes to develop a comprehensive plan	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo2	Society works best when people willingly make sacrifices for the good of everyone	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo6	It is important not to stand out too much in a team	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH3	When considering the design of a new building, harmonizing with the environment surrounding the proposed building is an important consideration	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		I completely disagree		Rating					I completely agree
NG3	You should be suspicious of everybody	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
NS4	We have little influence on the outcomes of events in our lives	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AD7	People who work hard are the ones who make society function	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
PI1	People tend to think of themselves first, before they think of others	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AT5	The outcomes of a business decision can be predicted accurately by a logical analysis of that decision	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
NM4	Good performance comes from taking control of one's business	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
PI4	Adults should strive to be independent from their parents	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
NM7	Humans should try to control nature whenever possible	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AT1	It is important to think things through carefully before acting on them	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AD1	It is human nature to place more importance on work, than on other activities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
NC1	Anyone's basic nature can change	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
PH2	People at higher levels should have a responsibility to make important decision for people below them	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AB8	If you don't like your working environment, you should quit your job	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	

		I completely disagree		Rating			I completely agree	
NH6	It is important to achieve harmony and balance in all aspects of life	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD2	Effective managers use spare time to get things done	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH1	A hierarchy of authority is the best form of organization	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo4	An employee's rewards should be based mainly on the workgroup or unit's performance	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC5	It is possible for people whose basic nature is good to change and become bad	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH2	It is our responsibility to conserve the balance of elements in our environment	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM6	A good manager should take control of problem situations and resolve them quickly	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH6	Organizations should have separate facilities, such as eating areas, for higher-level managers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG1	If supervisors don't always check when workers come and go, workers will probably lie about how many hours they work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC4	If someone is essentially a good person now, she or he will likely always be good	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH5	The most effective businesses are those which work together in harmony with their environments	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD6	Sitting around without doing anything is a waste of time	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG2	In general, you can't trust workers with keys to the building they work in	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		I completely disagree		Rating			I completely agree	
NS7	It is better to be lucky than smart	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI7	Ultimately, you are accountable only to yourself	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI5	An employee's reward should be based mainly on his or her own performance	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH1	All living things are equal and deserve the same care and consideration	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD3	Accomplishing a great deal of work is more rewarding than spending time in leisure	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG6	Some amount of corruption is inevitable in any organization	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC2	In general, bad people cannot change their ways	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB7	It is best to live for the moment	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM1	We can have a significant effect on the events in our lives	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB6	Quality of life is more important than financial accomplishment	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH4	The highest-ranking manager in a team should take the lead	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB2	It is important to do what you want, when you want	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG4	If employees don't have to submit receipts for their expenses, they are likely to lie about how much they spent	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		I completely disagree		Rating			I completely agree	
AB3	People should take time off to enjoy all aspects of life, even if t means not getting work done	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT7	It is always better to stop and plan than to act quickly	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI2	It is natural to put your own interests ahead of others	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG5	You cannot trust anyone without proof	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD5	Once you set a goal, it is important to work towards it until it is achieved	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo3	Good team members subordinate their own goals and thoughts to those of the team	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI3	Society works best when each person strives to serve his or her own interests	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD8	Hard work is always commendable	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB1	One should work to live, not live to work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo5	Every person has a responsibility for all others in his or her workgroup or unit	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM5	It's important to try to prevent problems you may encounter in your life	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB5	It is important to do what you want, when you want	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS2	Most things are determined by forces we cannot control	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		<div> <div>I completely disagree</div> <div>Rating</div> <div>I completely agree</div> </div>						
AD4	It is important to get work done before relaxing	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC3	It is possible for people whose basic nature is bad to change and become good	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS5	It is best to leave problem situation alone to see if they work out on their own	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

Section 3: Demographic questions

In this third section, you are asked several demographic questions.

Please mind that we treat your answers anonymously.

1: What nationality do you have?

2: How old are you?

3: In which country or countries did you grow up?

4: How long have you been studying business or management studies?

5: How many years of work experience do you have?

6: Please mark which situation best describes your student situation:

- ☐ Undergraduate (Bachelor-Student)
 - ☐ Graduate (Master-Student)
 - ☐ Postgraduate (PhD-Student or equivalent)
-

Thank you very much for your cooperation.

Appendix 4: German Questionnaire

Fragebogen

Sehr geehrte Damen und Herren,

Vielen Dank für Ihre Teilnahme an unserer Studie zu Kultur und gruppendynamischen Prozessen. Dieser Fragebogen umfasst einige Fragen zu der Kooperation in Ihrem Businessplan-Team. Er umfasst drei Abschnitte: Der erste bezieht sich auf gruppendynamische Prozesse in Ihrem Team. Der zweite Abschnitt zielt darauf an, einige Ihrer persönlichen Wertorientierungen zu erfassen. Der dritte und letzte Abschnitt erhebt einige demographische Fragen zu Ihrer Person.

Bitte beachten Sie, dass es keine richtigen oder falschen Antworten gibt – für jede Frage ist Ihre persönliche Einschätzung wichtig und interessant.

Wir garantieren, dass Ihre Daten und Aussagen völlig anonym erfasst und ausgewertet werden.

Vielen Dank für Ihre Kooperation.

Damit wir Ihre Antworten Ihrem Team zuordnen können, benötigen wir nur den Namen Ihres Businessplan-Teams.

Team Name: _____

Abschnitt 1: Arbeitssituation

In diesem Abschnitt werden Sie mit einigen Aussagen zu der Arbeitssituation in Ihrem Team konfrontiert. Bitte beachten Sie dabei, dass es keine unangebrachten Antworten gibt, sondern Sie Ihre persönliche Einschätzung zur Arbeitssituation in Ihrem Team wiedergeben sollen.

Bitte geben Sie an, wie Sie den folgenden Aussagen zustimmen. Nutzen Sie hierfür die Skala von 1 (stimme überhaupt nicht zu) bis 5 (stimme vollkommen zu).

	Aussage	Stimme nicht zu	Bewertung				Stimme zu
TR6	Wie gut wir Informationen kommunizieren wurde oft besprochen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
CO10	Die Teammitglieder waren glücklich über die Nützlichkeit der Informationen, die sie von anderen Teammitgliedern bekommen haben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
TR2	Wir haben regelmäßig besprochen ob wir im Team effektiv zusammenarbeiten.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
TR5	Die Strategien des Teams wurden selten geändert.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
CO3	Die Teammitglieder kommunizierten zumeist direkt und persönlich miteinander.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
CO6	Wichtige Informationen wurden in bestimmten Situationen anderen Teammitgliedern vorenthalten.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
CO4	Es gab Vermittler, über die viel kommuniziert wurde.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
CO8	Die Teammitglieder waren glücklich darüber, wie rechtzeitig sie Informationen von anderen Teammitgliedern bekommen haben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
TR1	Das Team überprüfte häufig seine Ziele.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
TR4	In diesem Team modifizierten wir unsere Ziele, wenn sich die Bedingungen änderten.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
CO5	Projektrelevante Information wurde offen von allen Teammitgliedern geteilt.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
CO9	Die Teammitglieder waren glücklich über die Genauigkeit der Informationen, die sie von anderen Teammitgliedern bekommen haben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
CO2	Die Teammitglieder kommunizierten häufig in spontanen Treffen, Telefongesprächen, etc. miteinander.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	

TR8	Die Art, wie Entscheidungen getroffen wurden, wurde selten geändert.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO7	In unserem Team gab es Konflikte über die Offenheit der Informationsflüsse.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR7	Das Team überprüfte häufig die Vorgehensweise zur Erledigung der Aufgabe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR3	Die Methoden, die das Team zur Erledigung der Aufgabe nutzte, wurden oft diskutiert.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO1	Es gab häufige Kommunikation im Team.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Bitte beschreiben Sie für die folgenden Fragen die Häufigkeit des Auftretens auf einer Skala zwischen 1 (Nie) und 5 (Sehr häufig).

	Frage	Nie	Bewertung			Sehr häufig
TC2	Wie häufig gab es Meinungsverschiedenheiten in Ihrem Team über die Projektaufgabe, an der Sie gearbeitet haben?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TC3	Wie häufig hatten Leute in Ihrem Team gegensätzliche Ansichten über das Projekt an dem Sie gearbeitet haben?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TC1	Wie viel Konflikt zwischen Ideen gab es in Ihrem Team?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Abschnitt 2: Werteorientierungen

In diesem zweiten Abschnitt werden Sie mit einigen Aussagen zu Arbeits- und Lebenssituationen konfrontiert. Diese zielen darauf ab, Ihre Orientierung im Kontakt mit der Natur und Mitmenschen zu erfassen. Auch hier gibt es keine falschen oder unpassenden Antworten, sondern es zählt Ihre persönliche Meinung und Einstellung.

Bitte geben Sie an, wie Sie den folgenden Aussagen zustimmen. Nutzen Sie hierfür die Skala von 1 (stimme überhaupt nicht zu) bis 7 (stimme vollkommen zu).

	Aussage	Stimme gar nicht zu	Bewertung					Stimme voll zu
PCo8	Die Verantwortung für Familienmitglieder einer Person sollte über die für Eltern und Kinder hinausgehen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS3	Was immer passieren wird, passiert auch, egal welche Aktionen Menschen ergreifen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH7	Menschen auf niedrigeren Ebenen einer Organisation sollten nicht viel Macht in der Organisation haben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH5	Menschen auf niedrigeren Ebenen sollten Aufträge aus höheren Ebenen ohne Fragen erledigen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT3	Menschen sollten stets sorgfältig nachdenken bevor sie handeln.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH7	Es ist wichtig, einen Ausgleich zwischen Geschäftsbereichen und Einheiten einer Organisation zu schaffen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD9	Menschen, die hart arbeiten, verdienen großen Respekt.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI6	Wir sollten versuchen zu vermeiden, von anderen abhängig zu sein.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT6	Ein logisches Argument ist genauso überzeugend wie sichtbare Beweise, dass etwas funktionieren wird	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM3	Mit ausreichend Wissen und Ressourcen kann jedes schlecht laufende Geschäft gedreht werden.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT2	Alle Geschäftsentscheidungen sollten von allen möglichen Perspektiven analysiert sein, bevor sie umgesetzt werden.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Stimme gar nicht zu	Bewertung					Stimme voll zu
NS6	Ob man Erfolg hat hängt am meisten vom Glück ab.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo7	Jede Person im Team sollte verantwortlich für die Leistung von allen anderen im Team sein.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT4	Auch wenn es mehr Zeit kostet, sollten Geschäftsentscheidungen auf Basis von Analysen getan werden, nicht Intuition.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH3	Mitarbeiter sollten nach der Hierarchieebene in der Organisation bezahlt werden.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD10	Man sollte leben, um zu arbeiten, nicht arbeiten um zu leben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH4	Viele Probleme der Welt passieren aufgrund unserer Versuche, die natürlichen Kräfte in der Welt zu kontrollieren.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo1	Die Leistung des Teams ist wichtiger als die Einzelleistung eines Mitglieds.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM2	Mit genügend Zeit und Ressourcen können Menschen fast alles schaffen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB4	Man sollte sich nicht darum kümmern hart zu arbeiten, wenn man sich nicht danach fühlt.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS1	Menschen sollten nicht versuchen, den Lebensweg, der Ihnen vorbestimmt ist, zu ändern.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT8	Egal welche Situation, es lohnt sich immer, sich die zusätzliche Zeit zu nehmen, um einen umfassenden Plan zu machen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo2	Die Gesellschaft funktioniert am besten, wenn Menschen bereit sind Opfer für das Allgemeinwohl zu erbringen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo6	Es ist wichtig, nicht zu sehr in einem Team herauszustechen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH3	Wenn es um das Design eines neuen Gebäudes geht, ist es wichtig, dass es mit der Umwelt um das vorgeschlagene Gebäude harmonisiert.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Stimme gar nicht zu	Bewertung						Stimme voll zu
NG3	Man sollte jedem gegenüber argwöhnisch sein.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
NS4	Wir haben geringen Einfluss auf den Ausgang von Ereignissen in unserem Leben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AD7	Menschen die hart arbeiten sind diejenigen, die dafür sorgen, dass die Gesellschaft funktioniert.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
PI1	Menschen denken eher zuerst an sich selbst, bevor sie an andere denken.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AT5	Die Ergebnisse einer Geschäftsentscheidung können genau vorhergesagt werden durch eine logische Analyse der Entscheidung.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
NM4	Gute Leistung rührt daher, dass man Kontrolle über sein Geschäft übernimmt.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
PI4	Erwachsene sollten danach streben, unabhängig von ihren Eltern zu sein.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
NM7	Die Menschen sollten versuchen die Natur zu kontrollieren, wann immer das möglich ist.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AT1	Es ist wichtig, Dinge sorgfältig zu durchdenken, bevor man diesbezüglich handelt.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AD1	Es ist die Natur des Menschen, dass Arbeit wichtiger als andere Aktivitäten ist.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
NC1	Das Wesen jedes Menschen kann sich verändern.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
PH2	Menschen auf höheren Ebenen sollten die Verantwortung haben, wichtige Entscheidungen für Menschen unter ihnen zu treffen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
AB8	Wenn einem das Arbeitsumfeld nicht gefällt, sollte man kündigen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	

		Stimme gar nicht zu	Bewertung					Stimme voll zu
NH6	Es ist wichtig, Harmonie und Ausgeglichenheit in allen Aspekten des Lebens zu erreichen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD2	Effektive Manager nutzen Freizeit, um Dinge erledigt zu bekommen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH1	Eine autoritäre Hierarchie ist die beste Organisationsform.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo4	Die Bezahlung eines Mitarbeiters sollte hauptsächlich auf der Teamleistung oder der Leistung der Einheit beruhen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC5	Es ist möglich, dass grundgute Menschen, sich ändern und schlecht werden.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH2	Es ist unsere Verantwortung, das Gleichgewicht der Elemente in unserer Umwelt zu erhalten.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM6	Ein guter Manager sollte Kontrolle über Problemsituationen gewinnen und diese schnell lösen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH6	Organisationen sollten separate Einrichtungen, wie Essensbereiche, für höherrangige Manager haben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG1	Wenn Vorgesetzte nicht immer kontrollieren, wann Arbeiter kommen und gehen, werden diese vermutlich über ihre Arbeitszeiten lügen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC4	Wenn jemand jetzt eine grundsätzlich gute Person ist, wird er oder sie sicherlich auch immer gut bleiben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH5	Die effektivsten Unternehmen sind solche, die in Harmonie mit ihrer Umwelt zusammenarbeiten.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD6	Herumsitzung ohne etwas zu tun ist Zeitverschwendung.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG2	Im Allgemeinen kann man Mitarbeitern nicht vertrauen, die Schlüssel zu den Gebäuden in denen sie arbeiten haben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS7	Es ist besser, Glück zu haben als klug zu sein.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Stimme gar nicht zu	Bewertung					Stimme voll zu
PI7	Letztendlich ist man nur sich selbst gegenüber verantwortlich.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI5	Die Bezahlung eines Mitarbeiters sollte hauptsächlich auf seiner eigenen Leistung beruhen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH1	Alle Lebewesen sind gleich und verdienen dieselbe Fürsorge und Beachtung.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD3	Viel Arbeit erledigt zu haben ist lohnender als Freizeit.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG6	Ein gewisses Maß an Korruption ist in jeder Organisation unvermeidbar.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC2	Normalerweise können schlechte Menschen ihre Lebensweise nicht verändern.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB7	Es ist am besten, für den Moment zu leben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM1	Wir können einen erheblichen Einfluss auf Ereignisse in unserem Leben haben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB6	Lebensqualität ist wichtiger als finanzielle Errungenschaften.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH4	Der höchstrangige Manager in einem Team sollte die Führung übernehmen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB2	Es ist wichtig, das zu tun, was man will, wann man will.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG4	Wenn Mitarbeiter keine Belege für ihre Ausgaben einreichen müssen, werden sie vermutlich darüber lügen, wie viel sie ausgegeben haben.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB3	Menschen sollten frei nehmen um alle Aspekte des Lebens zu genießen, auch wenn das bedeutet, dass die Arbeit nicht fertig wird.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Stimme gar nicht zu	Bewertung					Stimme voll zu
AT7	Es ist immer besser zu stoppen und zu planen, bevor man schnell handelt.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI2	Es ist natürlich, seine eigenen Interessen vor Andere zu stellen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG5	Ohne Nachweis kann man niemandem trauen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD5	Wenn man sich ein Ziel setzt ist es wichtig, darauf hinzuarbeiten bis es erreicht ist.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo3	Gute Teammitglieder ordnen ihre eigenen Ziele und Gedanken denen des Teams unter.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI3	Die Gesellschaft funktioniert am besten, wenn jede Person danach strebt, seine eigenen Interessen zu verfolgen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD8	Harte Arbeit ist immer lohnenswert.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB1	Man sollte arbeiten um zu leben, nicht leben um zu arbeiten.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo5	Jede Person hat Verantwortung für alle anderen in seinem oder ihrem Team oder Einheit.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM5	Es ist wichtig zu versuchen, Probleme, denen man im Leben begegnet, zu verhindern.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB5	Es ist wichtig, das zu tun, was man will, wann man will.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS2	Die meisten Dinge werden von Kräften bestimmt, die wir nicht kontrollieren können.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD4	Es ist wichtig, die Arbeit fertigzustellen bevor man sich entspannt.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC3	Menschen mit schlechtem Wesen können sich ändern und gut werden.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS5	Am besten lässt man eine Problemsituation auf sich beruhen, um zu sehen, ob sie sich von alleine löst.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

Section 3: Demographische Fragen.

1: Welche Nationalität(en) haben Sie?

2: Wie alt sind Sie?

3: In welchem Land (in welchen Ländern) sind Sie aufgewachsen?

4: Wie lange haben Sie Management studiert?

5: Wie viele Jahre Arbeitserfahrung haben Sie?

6: Welche Situation
beschreibt Sie am besten:

- ☐ Undergraduate (Bachelor-Student)
 - ☐ Graduate (Master-Student)
 - ☐ Postgraduate (PhD-Student or equivalent)
-

Vielen Dank für Ihre Mitarbeit.

Appendix 5: French Questionnaire

Questionnaire

Mesdames, Messieurs,

Nous vous remercions de participer à notre étude sur la culture et les processus de dynamiques de groupe. Ce questionnaire contient quelques questions concernant votre capacité à travailler en équipe lors de l'élaboration du business plan. Il est composé de trois sections: La première concerne les processus dynamiques dans votre équipe. La deuxième vise à mieux comprendre les orientations concernant vos valeurs personnelles. La dernière rassemble quelques questions sur votre situation personnelle.

S'il vous plaît, prenez en considération qu'il n'y aura pas de réponses correctes ou erronées, le but est de comprendre votre opinion personnelle.

Nous garantissons l'anonymat et la non communication de vos données personnelles, ainsi que de vos réponses lors du dépouillement des questionnaires.

En vous remerciant d'avance de votre collaboration.

Pour pouvoir attribuer vos réponses à votre groupe de travail, nous avons uniquement besoin du nom de votre équipe de business plan.

Nom de l'équipe: _____

Section 1: Situation de travail

Dans cette section, vous êtes confrontés avec quelques énonciations sur la situation de travail dans votre équipe. Nous vous prions de considérer qu'il n'y aura pas de réponses inconvenantes, mais vous êtes sensé donner votre opinion sur la situation de travail dans votre équipe.

En fonction de votre degré de consentement, nous vous prions de cocher les cases suivantes, sur une échelle allant de 1 (je n'approuve pas du tout) à 5 (j'approuve complètement).

	Enonciation	Je n'approuve pas du tout		Evaluation		J'approuve complètement
TR6	Nous avons souvent discuté de la qualité d'échange des informations.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO10	Les membres de l'équipe étaient heureux de l'utilité des informations qu'ils ont obtenues par d'autres membres.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR2	Nous avons souvent discuté si nous coopérons efficacement en équipe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR5	Les stratégies de l'équipe ont été changées rarement.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO3	Les membres de l'équipe ont correspondu directement et personnellement entre eux la plupart de temps.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO6	Dans certaines situations, des informations importantes ont été retenues par d'autres membres de l'équipe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO4	Il y avait des intermédiaires par qui on communiquait beaucoup.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO8	Les membres de l'équipe étaient heureux de la ponctualité des informations qu'ils ont obtenues des autres membres.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR1	L'équipe a souvent réexaminé ses objectifs.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR4	Dans cette équipe nous avons modifié nos objectifs quand les circonstances changeaient.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO5	Des informations pertinente pour projet ont été partagées franchement par tout les membres de l'équipe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO9	Les membres de l'équipe étaient heureux de la précision des informations qu'ils ont obtenues par d'autres membres.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

CO2	Les membres de l'équipe ont souvent communiqué entre eux par des rendez-vous, appels, etc. spontanés.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR8	La façon de prendre des décisions a été rarement changée.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO7	Dans notre équipe il y avait des conflits sur la franchise du flux d'informations.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR7	L'équipe a souvent réexaminé sa démarche pour accomplir la tâche.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR3	Les méthodes utilisées par l'équipe pour accomplir la tâche ont été souvent discutées.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO1	La communication a été fréquente au sein de l'équipe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

En fonction de la fréquence d'apparition, nous vous prions de cocher les cases suivantes, sur une échelle allant de 1 (jamais) à 5 (très souvent).

	Questions	Jamais	Evaluation				Très souvent
TC2	Quelle a été la fréquence de divergence d'opinion concernant les tâches du projet sur lesquelles vous avez travaillé ?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
TC3	Quelle a été la fréquence avec laquelle les équipiers ont eu des opinions contraires concernant le projet sur lequel vous avez travaillé.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
TC1	Combien de conflits d'idées y a-t'il eu dans votre équipe?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	

Séction 2: Orientations des valeurs

Dans cette deuxième section vous êtes confronté avec quelques énonciations qui décrivent des situations de travail et de vie privée. Elles visent à saisir vos orientations lorsque vous êtes en contact avec la nature et d'autres personnes. Il n'existe pas de réponses erronées. Ce sont uniquement vos opinions et points de vue qui comptent.

S'il vous plaît, signalez votre degré de consentement avec les énonciations suivantes en cochant les cases suivantes, sur une échelle de 1 (je n'approuve pas du tout) à 5 (j'approuve complètement).

	Enonciations	Je n'approuve pas du tout	Evaluation					J'approuve complètement
PCo8	La responsabilité de quelqu'un envers les membres de sa famille devrait dépasser ses parents et ses enfants.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS3	Ce qui doit se passer, se passera, quoi que l'on fasse.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH7	Des personnes se trouvant en bas de la hiérarchie d'une organisation ne devraient pas avoir beaucoup de pouvoir dans l'organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH5	Des personnes se trouvant en bas de la hiérarchie d'une organisation devraient exécuter les commandes émanant des supérieurs sans poser de questions.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT3	On devrait toujours réfléchir attentivement avant d'agir.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH7	Il est important d'avoir un équilibre entre les divisions et les départements d'une organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD9	Les gens qui travaillent dur méritent beaucoup de respect.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI6	On devrait essayer d'éviter d'être dépendant des autres.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT6	Un argument logique pour montrer qu'une chose va bien fonctionner est aussi persuasif qu'une preuve concrète.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM3	Avec assez de savoir-faire et de ressources chaque commerce qui se porte mal pourrait être redressé.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Je n'approuve pas du tout	Evaluation					J'approuve complètement
AT2	Toutes les décisions commerciales devraient être analysées sous tous les angles avant d'être réalisées.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS6	La réussite d'un individu dépend principalement de la chance.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo7	Chaque membre de l'équipe devrait être responsable de la performance de tous les autres membres de l'équipe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT4	Même si cela demande plus de temps, les décisions commerciales devraient être prises sur la base d'analyses et non pas sur des intuitions.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH3	Les employés devraient être payés selon leur position dans la hiérarchie.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD10	Il faudrait vivre pour travailler, pas travailler pour vivre.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH4	Beaucoup de problèmes en ce monde résultent du contrôle que nous essayons d'exercer sur les forces naturelles.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo1	La performance collective est plus importante que la performance individuelle d'un membre de l'équipe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM2	Avec assez de temps et de ressources à disposition, des gens peuvent presque tout réussir.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB4	On ne devrait pas veiller à travailler durement quand on n'a pas l'envie.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS1	Les hommes ne devraient pas essayer de changer le destin auquel ils sont voués.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT8	Peu importe la situation, on y gagne toujours à prendre du temps supplémentaire pour développer un plan complet.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo2	La société fonctionne au mieux quand les gens sont prêts à faire des sacrifices pour le bien commun.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo6	C'est important de ne pas trop se détacher d'un groupe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Je n'approuve pas du tout	Evaluation					J'approuve complètement
NH3	En ce qui concerne le design d'un nouveau bâtiment, il est important qu'il harmonise avec son environnement.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG3	On devrait se méfier de chacun.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS4	Nous avons peu d'influence sur le dénouement des événements de notre vie.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD7	Les gens qui travaillent dur sont responsables du bon fonctionnement de la société.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI1	Les gens tendent à penser d'abord à eux-mêmes avant de penser aux autres.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT5	Les résultats d'une décision commerciale peuvent être prévus par une analyse logique de la décision.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM4	Une bonne performance découle de l'obtention du contrôle sur l'activité commerciale.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI4	Les adultes devraient aspirer à être indépendants de leurs parents.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM7	Les hommes devraient essayer de contrôler la nature chaque fois qu'il leur est possible.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT1	Il est important d'approfondir les choses avant d'agir.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD1	Dans la nature humaine le travail est plus important que d'autres activités.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC1	La nature de chacun peut changer.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH2	Des personnes haut placées devraient être responsables de la prise de décisions importantes pour leurs subordonnés.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB8	Si un individu n'aime pas son environnement de travail, il devrait démissionner.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Je n'approuve pas du tout	Evaluation					J'approuve complètement
NH6	Il est important d'atteindre l'harmonie et l'équilibre dans tous les aspects de sa vie.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD2	Des managers efficaces utilisent leur temps libre pour terminer des affaires.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH1	Une hiérarchie autoritaire est la meilleure forme d'organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo4	Le salaire d'un employé devrait être basé principalement sur la performance de son équipe ou de son unité.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC5	Il est possible que des personnes de bonne nature changent leur caractère de manière négative.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH2	Nous avons la responsabilité de conserver l'équilibre des éléments de notre environnement.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM6	Un bon manager devrait prendre le contrôle des situations problématiques et les résoudre rapidement.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH6	Des organisations devraient avoir des infrastructures séparées, par exemple, une cantine de managers de haut rang.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG1	Si les supérieurs ne contrôlent pas les heures d'arrivée et de sortie, les employés vont probablement essayer de frauder sur leurs heures de travail.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC4	Si un individu a un bon fond maintenant, il le restera sans doute toujours.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH5	Les entreprises les plus efficaces sont celles qui travaillent en harmonie avec leur environnement.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD6	Rester assis à ne rien faire est une perte de temps.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG2	En général, on ne peut pas faire confiance aux employés qui ont les clefs des bâtiments dans lesquels ils travaillent.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Je n'approuve pas du tout	Evaluation					J'approuve complètement
NS7	Il est préférable d'avoir de la chance plutôt qu'être intelligent.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI7	Finalement, on n'est responsable que de soi-même.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI5	Le salaire d'un employé devrait être basé principalement sur ses propres performances.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH1	Tous les êtres vivants sont égaux et méritent la même sollicitude et le même respect.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD3	Avoir effectué beaucoup de travail est plus gratifiant que les loisirs.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG6	Un certain degré de corruption est inévitable dans toute organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC2	Normalement, les personnes mauvaises ne peuvent pas changer leur mode de vie.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB7	Le mieux est de vivre le moment présent.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM1	Nous pouvons avoir un impact significatif sur les événements de notre vie.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB6	La qualité de vie est plus importante que les acquis financiers.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH4	Le plus haut manager devrait prendre la direction du groupe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB2	Il est important de faire ce que l'on veut quand on veut.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG4	Si les employés ne doivent pas remettre de factures afin de justifier leurs dépenses, il est probable qu'ils mentent sur les sommes dépensées.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB3	Les gens devraient prendre des congés pour apprécier tous les aspects de la vie, même si ca implique qu'on ne termine pas le travail.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		Je n'approuve pas du tout	Evaluation					J'approuve complètement
AT7	Il est toujours mieux de s'arrêter et de planifier avant d'agir rapidement.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI2	Il est naturel de placer ses propres intérêts avant ceux des autres.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG5	On ne peut faire confiance à personne sans preuves.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD5	Quand on se fixe un but il est important de le porter a terme.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo3	Des bons équipiers font passer leurs propres objectifs et idées après ceux de toute l'équipe.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI3	La société fonctionne le mieux quand chaque personne tend à suivre ses propres intérêts.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD8	Un dur travail est toujours gratifiant.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB1	On devrait travailler pour vivre, pas vivre pour travailler.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo5	Chaque personne est responsable de tous les autres membres de son équipe ou entité.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM5	Il est important d'essayer d'éviter les problèmes avec lesquels on est confronté dans la vie.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB5	Il est important de faire ce que l'on veut quand on veut.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS2	La plupart des choses sont déterminées par des forces que nous ne pouvons pas contrôler.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD4	Il est important de terminer le travail avant de se reposer.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC3	Les personnes qui ont un mauvais caractère peuvent le changer et devenir bonnes.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS5	Il est préférable ne pas donner suite à une situation problématique, pour voir si elle peut se résoudre d'elle-même.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

Séction 3: Questions démographiques

1: Quelle est (sont) votre (vos) nationalité(e)(s)?

2: Quelle âge avez-vous?

3: Dans quel(s) pays avez-vous grandi?

4: Combien d'années avez-vous étudié le management ou le commerce?

5: Combien d'années d'expérience professionnelle avez vous?

6: Quelle situation
vous décrit le mieux?

- ☐ Undergraduate (Etudiant(e) de Bachelor/Licence)
- ☐ Graduate (Etudiant(e) de Master)
- ☐ Postgraduate (Doctorat ou équivalent)

Merci beaucoup de votre coopération.

Appendix 6: Spanish Questionnaire

Cuestionario

Estimados señores,

Muchas gracias por su participación en nuestro estudio con el tema de cultura y procesos dinámicos en equipos. El cuestionario contiene algunas preguntas en cuanto a la cooperación en su equipo del "Businessplan". Contiene tres párrafos: El primero se refiere a los procesos dinámicos en su equipo. El segundo párrafo quiere registrar algunos de sus orientaciones personales de valorar situaciones. El tercer y último párrafo acopia algunas preguntas demográficas sobre su persona.

Por favor tenga en cuenta que no hay respuestas correctas o falsas – para cada pregunta es importante e interesante su evaluación personal.

Garantizamos que sus datos y declaraciones están acopiados y evaluados completamente anónimo.

Muchas gracias por su cooperación.

Necesitamos solamente el nombre de su equipo del "Businessplan" para que podamos clasificar las respuestas con su equipo.

Nombre del equipo: _____

Párrafo 1: Situación laboral

En este párrafo usted se va a ver confrontado con algunas declaraciones en cuanto al clima laboral en su equipo. Por favor tenga en cuenta que no hay respuestas falsas, sino que usted debe reproducir su evaluación personal sobre el clima laboral en su equipo.

Por favor indique, cómo asiente a las declaraciones siguientes. Para esto utilice la escala de 1 (no estoy de acuerdo) hasta 5 (estoy completamente de acuerdo).

	Declaración	No estoy de acuerdo	Valoración			Estoy completamente de acuerdo
TR6	Hemos comentado frecuentemente qué bien comunicamos las informaciones.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO10	Los miembros del equipo estaban felices con la utilidad de las informaciones, que han recibido de otros miembros del equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR2	Hemos comentado regularmente si estamos cooperando efectivamente en el equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR5	Las estrategias del equipo estaban cambiando raramente.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO3	Los miembros del equipo en la mayoría de los casos comunicaron directamente y personalmente.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO6	En ciertas situaciones, informaciones importantes estaban privadas a otros miembros del equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO4	Había intermediarios sobre ellos se comunicaba mucho.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO8	Los miembros del equipo estaban felices con lo puntual que han recibido informaciones de otros miembros del equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR1	El equipo frecuentemente comprobó sus objetivos.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR4	En este equipo cambiamos los objetivos cuando se cambiaron las condiciones.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO5	Informaciones relevantes del proyecto estaban compartidas abiertamente entre todos los miembros del equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO9	Los miembros del equipo estaban felices con la exactitud de las informaciones que han recibido de otros miembros del equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

	Declaración	No estoy de acuerdo	Valoración			Estoy completamente de acuerdo
CO2	Los miembros del equipo comunicaban frecuentemente en reuniones espontáneas, conversaciones telefónicas, etc.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR8	La manera como decisiones estaban tomados, estaba cambiado raramente.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO7	En nuestro equipo había conflictos en cuanto al acceso y la franqueza de los flujos de informaciones.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR7	El equipo frecuentemente aprobó el prodecimiento para la ejecución de la tarea.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TR3	Los métodos que utilizó el equipo para ejecutar una tarea estaban discutido regularmente.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
CO1	Existía una frecuente comunicación en el equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Por favor para las preguntas siguientes describe la frecuencia de la presencia en una escala entre 1 (Nunca) y 5 (Frecuentemente).

	Pregunta	Nunca	Valoración			Frecuentemente
TC2	¿Con qué frecuencia había divergencias de opinión en cuanto a la tarea del proyecto que han trabajado?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TC3	¿Con qué frecuencia personas en su equipo tuvieron opiniones contradictorias sobre el proyecto que han trabajado?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
TC1	¿Cuánto de conflicto entre ideas existía en su equipo?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Párrafo 2: Orientaciones de valoración

En este segundo párrafo usted va a verse confrontado con algunas declaraciones en cuanto a las situaciones laborales y de vida. Tienen el objetivo de registrar su orientación en cuanto al contacto con la naturaleza y los prójimos. Aquí tampoco hay respuestas falsas o inapropiadas, sino se cuenta su opinión y actitud personal.

Por favor indique cómo asiente a los declaraciones siguientes. Para esto utilice la escala de 1 (no estoy de acuerdo) hasta 7 (estoy completamente de acuerdo)

	Declaración	No estoy de acuerdo	Valoración					Estoy completamente de acuerdo
PCo8	La responsabilidad para miembros de la familia debería superar la para padres y hijos.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS3	Pase lo que pase, da igual cuales acciones toman los humanos.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH7	Humanos que trabajan en niveles más bajos de una organización no deberían tener no tanto poder en este organización.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH5	Humanos que trabajan en niveles más bajos de una organización deberían ejecutar encargos de niveles más altos sin preguntas.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT3	Humanos deberían siempre pensar acuradamente antes de que actuen.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH7	Es importante crear un balance entre sectores operativos y unidades de una organización.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD9	Humanos que trabajan duro, merecen mucho respeto.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI6	Deberíamos intentar evitar de ser dependiente de otros.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT6	Un argumento lógico es lo mismo convincente como pruebas visibles que una cosa va a funcionar.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM3	Con saber y recursos suficientes se puede salvar cada negocio que va mal.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT2	Todas decisiones comerciales deberían estar analizadas de todas perspectivas posibles antes de que estén puesto en práctica.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		No estoy de acuerdo	Valoración					Estoy completamente de acuerdo
NS6	Si se tiene éxito lo más depende del suerte.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo7	Cada persona en el equipo debería ser responsable para el rendimiento de todos los otros miembros del equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT4	Aunque cuesta más tiempo, decisiones comerciales deberían estar tomados en base de análisis, no en base de intuición.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH3	Colaboradores deberían estar pagados según su nivel en la jeraquía de la empresa.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD10	Se debería vivir para trabajar, no trabajar para vivir.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH4	Muchos problemas en el mundo surgen por nuestros intentos de controlar las fuerzas naturales del mundo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo1	El rendimiento del equipo es más importante que el rendimiento individual de un miembro del equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM2	Con suficiente tiempo y recursos, humanos pueden conseguir casi todo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB4	No se debería pensar en trabajar duro si uno no se siente así.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS1	Humanos no deberían intentar de cambiar el camino que está predefinido para ellos.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT8	Da igual en cual situación, siempre vale la pena tomar tiempo adicional para hacer un plan extenso.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo2	La sociedad funciona lo mejor si humanos están dispuestos a hacer sacrificios para el bienestar común.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo6	Es importante no destacar demasiado en un equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH3	Si se trata del diseño de un edificio nuevo es importante que armonice con el medio ambiente inmediato.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		No estoy de acuerdo	Valoración					Estoy completamente de acuerdo
NG3	Se debería ser suspicaz frente a cada persona.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS4	Solamente tenemos poca influencia sobre cómo salen acontecimientos en nuestra vida.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD7	Humanos que trabajan duro son aquellos que hacen la sociedad funcionar.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI1	Humanos más bien piensan en sí mismo antes de que piensen en otros.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT5	Los resultados de una decision comercial pueden ser pronosticados precisamente por un análisis lógico de la decisión.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM4	Buen rendimiento surge por tomar el control sobre el negocio.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI4	Adultos deberían aspirar a ser independiente de sus padres.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM7	Humanos deberían intentar de controlar la naturaleza siempre que sea posible.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AT1	Es importante madurar una cosa cuidadosamente antes de que se accione.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD1	Es el natural del humano que el trabajo es más importante que otras actividades.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC1	El carácter de un humano puede ser cambiado.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH2	Humanos en niveles más altos tienen la responsabilidad de tomar decisiones importantes para humanos en niveles más bajos.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB8	Si a alguien no le gusta el ambiente laboral, el debería presentar su dimisión.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH6	Es importante lograr armonía y equilibrio en todos los aspectos de la vida.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		No estoy de acuerdo	Valoración					Estoy completamente de acuerdo
AD2	Gerentes efectivos aprovechan su tiempo libre para conseguir cosas.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH1	Una jerarquía autoritaria es la forma mejor de una organización.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo4	La remuneración de un colaborador debería basarse sobre todo al rendimiento del equipo o en el rendimiento de la unidad.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC5	Es posible que humanos que fundamentalmente sean de buen carácter se cambien y se vuelven de mal carácter.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH2	Es nuestra responsabilidad de conservar el equilibrio de los elementos en nuestro medio ambiente.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM6	Un buen gerente debería ganar el control sobre situaciones problemáticas y resolver las rápidamente.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH6	Organizaciones deberían tener instalaciones separadas para gerentes de un rango más alto como por ejemplo áreas para comer.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG1	Si superiores no siempre controlan cuándo empleados llegan al trabajo y terminan con el trabajo, ellos probablemente van a mentir en cuanto a sus horas de trabajo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC4	Si alguien ahora es una persona de buen carácter, el o ella va a quedarlo para siempre seguramete.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH5	Las empresas más efectivas son aquellas que colaboran en armonía con su medio ambiente.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD6	Estar sentado sin hacer nada es desperdicio de tiempo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG2	En general no se puede confiar en empleados que tienen llaves de los edificios en que trabajan.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS7	Es mejor tener suerte que ser listo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		No estoy de acuerdo de acuerdo	Valoración					Estoy completamente de acuerdo
PI7	Al final uno es responsable solamente para sí mismo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI5	La remuneración de un colaborador debería ser basado principalmente en su propio rendimiento.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NH1	Todos los seres vivientes son iguales y merecen el mismo cuidado y atención.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD3	Haber realizado mucho trabajo es más provechoso que tiempo libre.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG6	Un poco de corrupción es inevitable en cada organización.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC2	Normalmente humanos malos no pueden cambiar su manera de vivir.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB7	Lo mejor es vivir para el momento.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM1	Podemos tener una influencia considerable sobre acontecimientos en nuestra vida.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB6	Calidad de vida es más importante que logros financieros.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PH4	El gerente del rango más alto debería tomar la dirección en un equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB2	Es importante hacer lo que se quiere cuando lo quiere.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG4	Si empleados no tienen que mostrar recibos sobre sus gastos, probablemente van a mentir sobre el volumen de sus gastos.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB3	Humanos deberían tomarse libre para disfrutar todos aspectos de la vida aunque esto significaría que el trabajo no va a estar lista.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

		No estoy de acuerdo	Valoración					Estoy completamente de acuerdo
AT7	Siempre es mejor desaccionar y planificar antes de que se accione rápidamente.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI2	Es natural preferir sus intereses en lugar de los de otros.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NG5	No se puede confiar en ninguno sin comprobación.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD5	Si se fija una meta, es importante trabajar para esto hasta que esté conseguido.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo3	Buenos miembros de equipo subordinan sus propios objetivos y pensamientos a los del equipo.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PI3	La sociedad funciona lo mejor si cada persona aspira a perseguir sus propios intereses.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD8	Trabajo duro siempre vale la pena.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB1	Se debería trabajar para vivir, no vivir para trabajar.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
PCo5	Cada persona tiene responsabilidad para todos los otros en su equipo o unidad.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NM5	Es importante intentar de prevenir problemas que se encuentran en la vida.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AB5	Es importante hacer lo que se quiere, cuándo lo quiere.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS2	La mayoría de las cosas son determinadas por fuerzas que no podemos controlar.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
AD4	Es importante terminar con el trabajo antes de que se relaje.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NC3	Humanos con un carácter malo pueden cambiarse y volverse en un carácter bueno.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
NS5	Es lo mejor dejar una situación problemática como está para ver si se resuelve por sí misma.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

Párrafo 3: Preguntas demográficas.

1: ¿Cuál(es) nacionalidad(es) usted tiene?

2: ¿Cuántos años tiene?

3: ¿En cuál país (en cuáles países) creció?

4: ¿Cuántos años ha estudiado „Management“?

5: ¿Cuántos años de experiencia laboral tiene?

6: ¿Cuál situación describe usted lo mejor?

- ☐ Undergraduate (Estudiante del Bachelor)
 - ☐ Graduate (Estudiante del Master)
 - ☐ Postgraduate (Estudiante de PhD o equivalente)
-

Muchas gracias por su colaboración.

Appendix 7: MVA in SPSS (original output)

Univariate Statistiken							
	N	Mittelwert	Standard- abweichung	Fehlend		Anzahl der Extremwerte ^a	
				Anzahl	Prozent	Niedrig	Hoch
AB1	431	4,8237	2,02462	5	1,1	0	0
AB2	432	3,9954	1,51097	4	,9	0	0
AB3	433	3,8776	1,56533	3	,7	0	0
AB4	430	2,8837	1,55264	6	1,4	0	8
AB5	432	3,8102	1,55520	4	,9	0	0
AB6	432	5,7500	1,19648	4	,9	5	0
AB7	434	4,3733	1,67410	2	,5	0	0
AB8	433	4,7413	1,54338	3	,7	7	0
AD1	433	3,1940	1,60418	3	,7	0	4
AD10	430	3,0605	2,03147	6	1,4	0	0
AD2	432	4,2199	1,77512	4	,9	0	0
AD3	433	3,6790	1,66554	3	,7	0	0
AD4	432	4,7593	1,27711	4	,9	4	0
AD5	432	5,8657	1,01977	4	,9	6	0
AD6	434	4,2995	1,90845	2	,5	0	0
AD7	432	4,5046	1,59610	4	,9	0	0
AD8	431	4,9026	1,61238	5	1,1	11	0
AD9	433	5,7806	1,28575	3	,7	16	0
AT1	431	5,4803	1,15092	5	1,1	32	0
AT2	428	5,2243	1,40796	8	1,8	4	0
AT3	433	5,7714	1,18279	3	,7	5	0
AT4	430	4,5721	1,46383	6	1,4	5	0
AT5	434	3,7903	1,37607	2	,5	0	0
AT6	434	4,7097	1,42998	2	,5	10	0
AT7	433	4,6374	1,40936	3	,7	7	0
AT8	432	4,5926	1,52192	4	,9	0	0
CO1	435	4,3195	,88586	1	,2	19	0
CO10	433	3,9954	,92795	3	,7	0	0
CO2	434	4,0300	1,05792	2	,5	41	0
CO3	434	4,3871	,85828	2	,5	21	0
CO4	430	2,4279	1,32685	6	1,4	0	0
CO4_R	430	3,5721	1,32685	6	1,4	0	0
CO5	433	4,5173	,76998	3	,7	12	0
CO6	432	1,6574	1,09766	4	,9	0	49
CO6_R	432	4,3426	1,09766	4	,9	49	0
CO7	433	1,8568	1,11505	3	,7	0	53
CO7_R	433	4,1432	1,11505	3	,7	53	0
CO8	432	3,5903	1,07759	4	,9	20	0

CO9	432	3,7847	,99998	4	,9	12	0
L1	435	4,0506	,87842	1	,2	29	0
L2	434	4,3180	,80432	2	,5	15	0
L3	432	4,0671	,85497	4	,9	17	0
L4	435	3,9816	,95985	1	,2	0	0
L5	433	4,1201	,86837	3	,7	19	0
NC1	433	4,6767	1,59334	3	,7	0	0
NC2	432	2,8889	1,46313	4	,9	0	8
NC2_R	432	5,1065	1,46665	4	,9	8	0
NC3	431	4,7703	1,47243	5	1,1	10	0
NC4	434	3,6912	1,55175	2	,5	0	0
NC4_R	434	4,3065	1,54997	2	,5	0	0
NC5	433	4,5473	1,61967	3	,7	0	0
NG1	434	3,5023	1,67890	2	,5	0	0
NG2	433	2,1432	1,23334	3	,7	0	12
NG3	431	2,8817	1,44429	5	1,1	0	10
NG4	432	3,7824	1,48742	4	,9	0	0
NG5	430	2,8907	1,41245	6	1,4	0	7
NG6	434	3,9194	1,67592	2	,5	0	0
NH1	432	5,0116	1,71721	4	,9	15	0
NH2	434	5,4147	1,25257	2	,5	27	0
NH3	432	5,1782	1,46678	4	,9	12	0
NH4	431	4,3434	1,53652	5	1,1	0	0
NH5	434	5,0668	1,37367	2	,5	5	0
NH6	433	6,0577	1,16225	3	,7	35	0
NH7	429	5,5594	1,16384	7	1,6	14	0
NM1	433	5,6882	1,13336	3	,7	7	0
NM2	432	5,1736	1,55038	4	,9	11	0
NM3	429	4,2751	1,71956	7	1,6	0	0
NM4	434	4,6889	1,26875	2	,5	8	0
NM5	433	4,4665	1,50444	3	,7	0	0
NM6	433	5,9215	,94444	3	,7	2	0
NM7	434	2,6866	1,42348	2	,5	0	51
NS1	432	2,2153	1,41173	4	,9	0	21
NS2	433	3,5127	1,46105	3	,7	0	0
NS3	434	2,7719	1,67884	2	,5	0	0
NS4	432	2,5116	1,48460	4	,9	0	22
NS5	432	2,5324	1,29925	4	,9	0	36
NS6	432	2,9167	1,41667	4	,9	0	4
NS7	428	3,1565	1,57298	8	1,8	0	14
PCo1	429	4,8625	1,56993	7	1,6	14	0
PCo2	431	5,0974	1,39259	5	1,1	5	0
PCo3	428	4,9182	1,42915	8	1,8	11	0
PCo4	433	3,6282	1,42979	3	,7	0	0

PCo5	432	5,0972	1,30314	4	,9	5	0
PCo6	431	3,2343	1,54569	5	1,1	0	6
PCo7	434	3,9954	1,67580	2	,5	0	0
PCo8	427	5,2787	1,42235	9	2,1	5	0
PH1	428	3,1565	1,64004	8	1,8	0	11
PH2	433	4,6767	1,48973	3	,7	12	0
PH3	426	3,8122	1,55297	10	2,3	0	0
PH4	431	4,1044	1,47877	5	1,1	0	0
PH5	433	2,6836	1,44470	3	,7	0	50
PH6	433	2,0092	1,40103	3	,7	0	59
PH7	434	3,2224	1,56225	2	,5	0	10
PI1	431	5,1508	1,46684	5	1,1	9	0
PI2	431	4,5661	1,36558	5	1,1	37	21
PI3	431	2,9258	1,40896	5	1,1	0	10
PI4	434	5,6083	1,24708	2	,5	9	0
PI5	434	4,9539	1,38040	2	,5	3	0
PI6	434	5,1521	1,44648	2	,5	5	0
PI7	434	3,8065	1,98362	2	,5	0	0
TC1	431	2,5336	,94900	5	1,1	0	8
TC2	431	2,4269	1,03367	5	1,1	0	9
TC3	432	2,6505	1,02205	4	,9	0	17
TR1	434	3,6728	,96538	2	,5	5	0
TR2	435	3,1655	1,16406	1	,2	0	0
TR3	434	3,2396	1,08643	2	,5	0	0
TR4	434	3,8456	1,00191	2	,5	0	0
TR5	433	3,4065	1,04357	3	,7	15	0
TR5_R	433	2,5935	1,04357	3	,7	0	15
TR6	430	3,4070	1,10285	6	1,4	26	0
TR7	434	3,2650	1,02004	2	,5	20	0
TR8	434	3,4862	1,01765	2	,5	13	0
TR8_R	434	2,5138	1,01765	2	,5	0	13
WS1	435	4,0621	,86313	1	,2	18	0
WS2	434	4,0783	,84795	2	,5	22	0
WS3	434	3,7627	1,13780	2	,5	0	0
Alter	430	23,2837	3,32238	6	1,4	0	18

a. Anzahl der Fälle außerhalb des Bereichs ($Q1 - 1,5 \cdot IQR$, $Q3 + 1,5 \cdot IQR$).

Appendix 8: Results of the CFA for “activity” orientation

Activity Orientation						
Cronbach's Alpha	Being-Orientation .48		Doing-Orientation .72		Thinking-Orientation .73	
Cross-Loadings						
	Loadings	Indicator Reliabilities	Loadings	Indicator Reliabilities	Loadings	Indicator Reliabilites
AB1	0.71	0.50	-0.30		-0.10	
AB2	0.31	0.09	-0.05		0.07	
AB3	0.10	0.01	0.02		0.09	
AB4	0.59	0.35	-0.22		0.03	
AB5	0.34	0.11	-0.12		0.12	
AB6	-0.17	0.03	0.10		0.13	
AB7	0.49	0.24	-0.14		0.00	
AD1	-0.25		0.55	0.30	0.21	
AD2	-0.22		0.58	0.34	0.26	
AD3	-0.24		0.58	0.33	0.20	
AD4	-0.13		0.51	0.26	0.23	
AD5	-0.11		0.42	0.18	0.27	
AD6	-0.22		0.54	0.29	0.15	
AD7	-0.08		0.41	0.17	0.11	
AD8	-0.20		0.59	0.35	0.19	
AD9	-0.13		0.59	0.34	0.36	
AD10	-0.38		0.53	0.28	0.23	
AT1	0.00		0.23		0.64	0.41
AT2	-0.06		0.29		0.71	0.50
AT3	0.03		0.18		0.51	0.26
AT4	-0.00		0.19		0.51	0.26
AT5	-0.11		0.34		0.61	0.38
AT6	0.03		0.13		0.23	0.05
AT7	0.03		0.23		0.63	0.39
AT8	-0.03		0.29		0.65	0.42
AVE		.19		.29		.38

Appendix 9: Results of the CFA in PLS for "Relationships among people" orientation

Relationships among people						
	People Collectivity		People Hierarchy		People Individualism	
Cronbach's Alpha	.57		.65		.46	
Cross-Loadings						
	Loadings	Indicator Reliabilities	Loadings	Indicator Reliabilities	Loadings	Indicator Reliabilities
PCo1	0.25	0.06	0.02		-0.01	
PCo2	0.00	0.00	0.01		0.03	
PCo3	-0.27	0.07	0.10		0.12	
PCo4	0.38	0.15	0.16		-0.09	
PCo5	0.45	0.20	-0.01		-0.08	
PCo6	0.38	0.14	-0.03		-0.09	
PCo7	0.19	0.03	-0.02		-0.01	
PCo8	0.68	0.47	-0.06		-0.17	
PH1	-0.15		0.68	0.46	0.37	
PH2	0.11		0.56	0.32	0.21	
PH3	0.00		0.57	0.33	0.19	
PH4	-0.01		0.62	0.39	0.25	
PH5	0.02		0.44	0.19	0.11	
PH6	-0.01		0.46	0.21	0.20	
PH7	-0.03		0.56	0.32	0.23	
PI1	-0.10		0.15		0.42	0.18
PI2	-0.15		0.25		0.63	0.39
PI3	-0.20		0.37		0.72	0.51
PI4	0.07		0.13		0.13	0.02
PI5	-0.19		0.16		0.50	0.25
PI6	-0.01		0.13		0.32	0.10
PI7	-0.12		0.17		0.47	0.22
AVE		.14		.32		.24

Appendix 10: Results of the CFA in PLS for "Relation to environment" orientation

Relation to environment orientation						
	Nature Harmony		Nature Mastery		Nature Subjugation	
Cronbach's Alpha	.56		.52		.64	
Cross-Loadings						
	Loadings	Indicator Reliabilities	Loadings	Indicator Reliabilities	Loadings	Indicator Reliabilities
NH1	0.45	0.20	0.09		0.10	
NH2	0.45	0.20	0.15		0.07	
NH3	0.49	0.24	0.19		0.08	
NH4	0.12	0.01	-0.06		0.10	
NH5	0.71	0.51	0.26		0.21	
NH6	0.49	0.24	0.12		0.07	
NH7	0.66	0.44	0.35		0.11	
NM1	0.07		0.33	0.11	-0.12	
NM2	0.12		0.48	0.23	0.04	
NM3	0.28		0.68	0.46	0.15	
NM4	0.19		0.56	0.31	0.03	
NM5	0.25		0.55	0.30	0.05	
NM6	0.23		0.54	0.29	0.01	
NM7	-0.01		0.17	0.03	0.14	
NS1	0.14		0.06		0.66	0.44
NS2	0.08		0.00		0.59	0.35
NS3	0.08		0.05		0.56	0.31
NS4	-0.05		-0.15		0.24	0.06
NS5	-0.02		0.00		0.08	0.01
NS6	0.15		0.07		0.71	0.50
NS7	0.05		-0.04		0.42	0.18
AVE		.26		.25		.26

Appendix 11: Results from CFA in PLS for "Human Nature" orientation

Cronbach's Alpha	Human Nature Changeable .65		Human Nature Good .65	
	Loadings	Indicator Reliabilities	Loadings	Indicator Reliabilities
NC1	0.40	0.16	-0.07	
NC2_R	0.92	0.85	-0.29	
NC3	0.63	0.40	0.11	
NC4_R	0.20	0.04	-0.03	
NC5	-0.02	0.00	0.13	
NG1	-0.25		0.73	0.53
NG2	-0.23		0.68	0.46
NG3	-0.15		0.47	0.22
NG4	-0.21		0.68	0.46
NG5	-0.17		0.55	0.30
NG6	-0.12		0.48	0.23
AVE		.29		.37

Appendix 12: Results for the CFA in PLS for the six dimensions of the CPQ4

	CPQ4 remaining dimensions					
	Activity Doing	Activity Thinking	Human Nature Changeabl e	Human Nature Good	Nature Subjugatio n	People Hierarchy
Alpha	.72	.70	.67	.67	.63	.63
	Cross-Loadings					
	Loadings	Loadings	Loadings	Loadings	Loadings	Loadings
AD1	0.53	0.24	-0.05	0.16	0.11	0.30
AD10	0.46	0.25	0.00	0.07	0.05	0.17
AD2	0.59	0.29	-0.21	0.26	0.20	0.36
AD3	0.56	0.24	-0.11	0.10	0.12	0.28
AD4	0.53	0.24	-0.08	0.05	0.04	0.14
AD5	0.44	0.26	0.05	-0.01	-0.08	0.08
AD6	0.53	0.18	-0.13	0.13	0.13	0.21
AD7	0.45	0.12	-0.10	0.22	0.02	0.23
AD8	0.60	0.21	-0.03	0.15	0.06	0.31
AD9	0.64	0.38	-0.04	0.11	0.03	0.23
AT1	0.26	0.65	0.02	0.07	0.01	0.15
AT2	0.33	0.69	-0.03	0.03	0.15	0.11
AT3	0.21	0.50	0.04	-0.03	0.02	0.07
AT4	0.21	0.51	-0.07	0.01	-0.06	0.13
AT5	0.36	0.63	-0.05	0.20	0.08	0.26
AT6	0.14	0.26	-0.07	0.06	0.09	0.11
AT7	0.25	0.64	0.01	0.07	0.06	0.14
AT8	0.32	0.64	-0.03	-0.02	0.02	0.12
NC1	-0.08	0.03	0.40	-0.06	-0.10	-0.09
NC2_R	-0.11	-0.05	0.94	-0.30	-0.27	-0.20
NC3	-0.09	-0.02	0.69	-0.12	-0.14	-0.13
NC4_R	-0.17	-0.05	0.22	-0.02	-0.12	-0.08
NC5	-0.05	-0.02	0.08	0.10	-0.09	0.03
NG1	0.19	0.14	-0.25	0.70	0.10	0.36
NG2	0.19	0.04	-0.22	0.70	0.23	0.33
NG3	0.10	0.05	-0.11	0.50	0.19	0.19
NG4	0.10	0.06	-0.22	0.69	0.17	0.24
NG5	0.14	0.07	-0.17	0.55	0.12	0.20
NG6	0.08	-0.01	-0.12	0.52	0.15	0.27
NS1	0.17	0.16	-0.09	0.12	0.53	0.13
NS2	0.10	0.08	-0.09	0.18	0.72	0.08
NS3	0.12	0.15	-0.18	0.19	0.68	0.12
NS4	0.06	0.01	-0.18	0.14	0.57	0.02
NS5	-0.05	-0.12	-0.19	0.13	0.42	0.09
NS6	0.04	0.03	-0.16	0.14	0.51	-0.01
NS7	0.00	-0.08	-0.14	0.11	0.45	0.03
PH1	0.42	0.19	-0.21	0.35	0.15	0.80
PH2	0.18	0.09	-0.05	0.16	-0.03	0.43
PH3	0.10	0.04	-0.05	0.16	0.02	0.36
PH4	0.15	0.11	-0.11	0.25	0.05	0.56
PH5	0.20	0.16	-0.10	0.24	0.06	0.58
PH6	0.14	0.05	-0.15	0.27	0.05	0.39
PH7	0.05	-0.08	-0.07	0.15	0.00	0.21
AVE	.29	.34	.31	.38	.32	.26

Appendix 13: Original SPSS output for multicollinearity test of innovativeness

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,317	,296		1,071	,287		
ExtentChange	,851	,163	,680	5,215	,000	,307	3,260
MacroImpact	,148	,198	,104	,747	,457	,270	3,700
MicroImpact	-,025	,167	-,018	-,148	,883	,339	2,953

a. Abhängige Variable: Novelty

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,021	,174		,119	,905		
MacroImpact	,446	,105	,391	4,230	,000	,326	3,064
MicroImpact	,256	,093	,238	2,740	,008	,369	2,709
Novelty	,290	,056	,363	5,215	,000	,575	1,738

a. Abhängige Variable: ExtentChange

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,020	,164		,123	,902		
MicroImpact	,385	,082	,408	4,703	,000	,429	2,332
Novelty	,045	,060	,064	,747	,457	,436	2,292
ExtentChange	,398	,094	,454	4,230	,000	,281	3,560

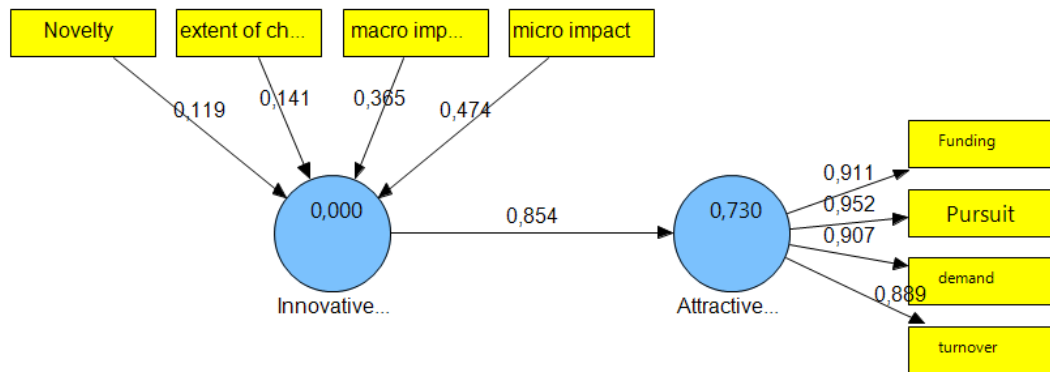
a. Abhängige Variable: MacroImpact

Koeffizienten^a

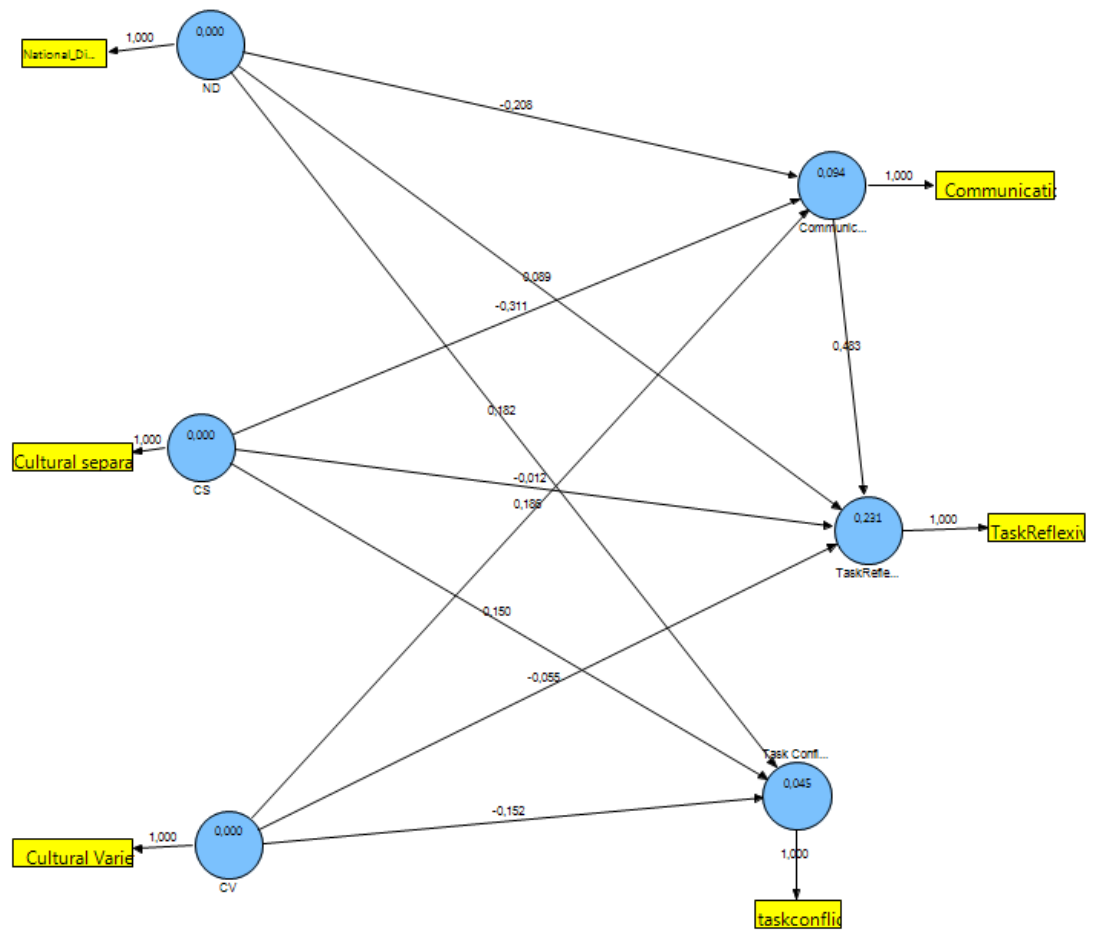
Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,839	,173		4,854	,000		
Novelty	-,011	,072	-,014	-,148	,883	,433	2,307
ExtentChange	,324	,118	,349	2,740	,008	,252	3,969
MacroImpact	,547	,116	,515	4,703	,000	,340	2,941

a. Abhängige Variable: MicroImpact

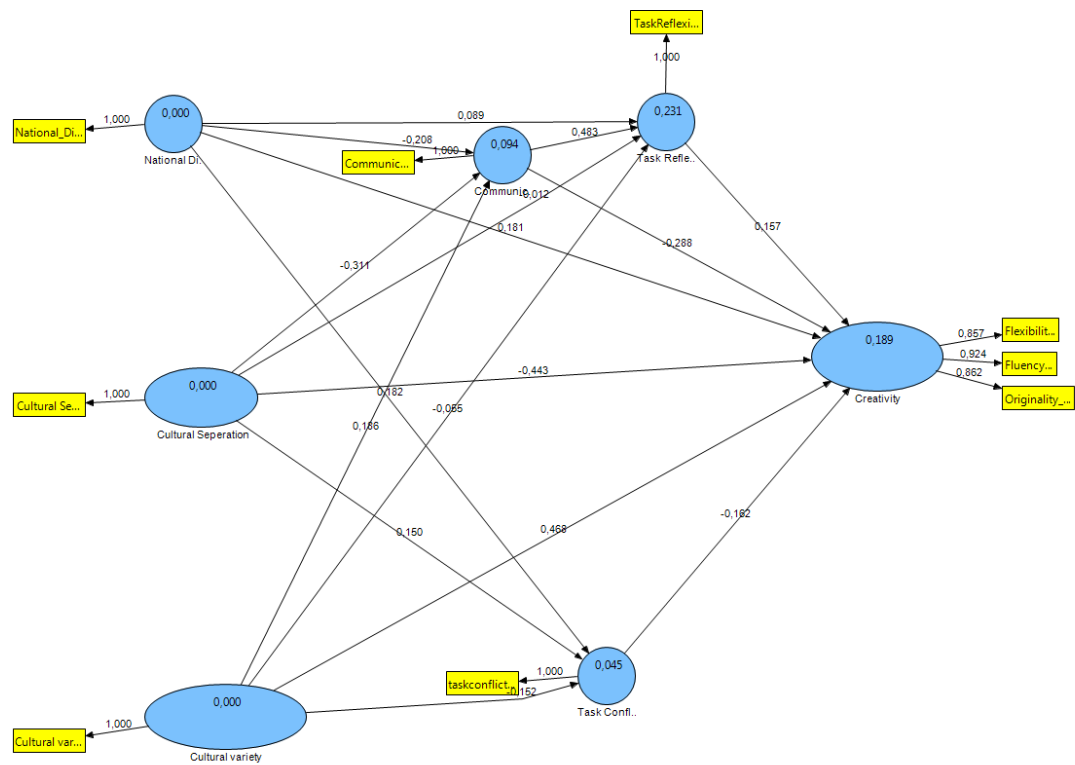
Appendix 14: Original PLS output for external validity test of innovativeness



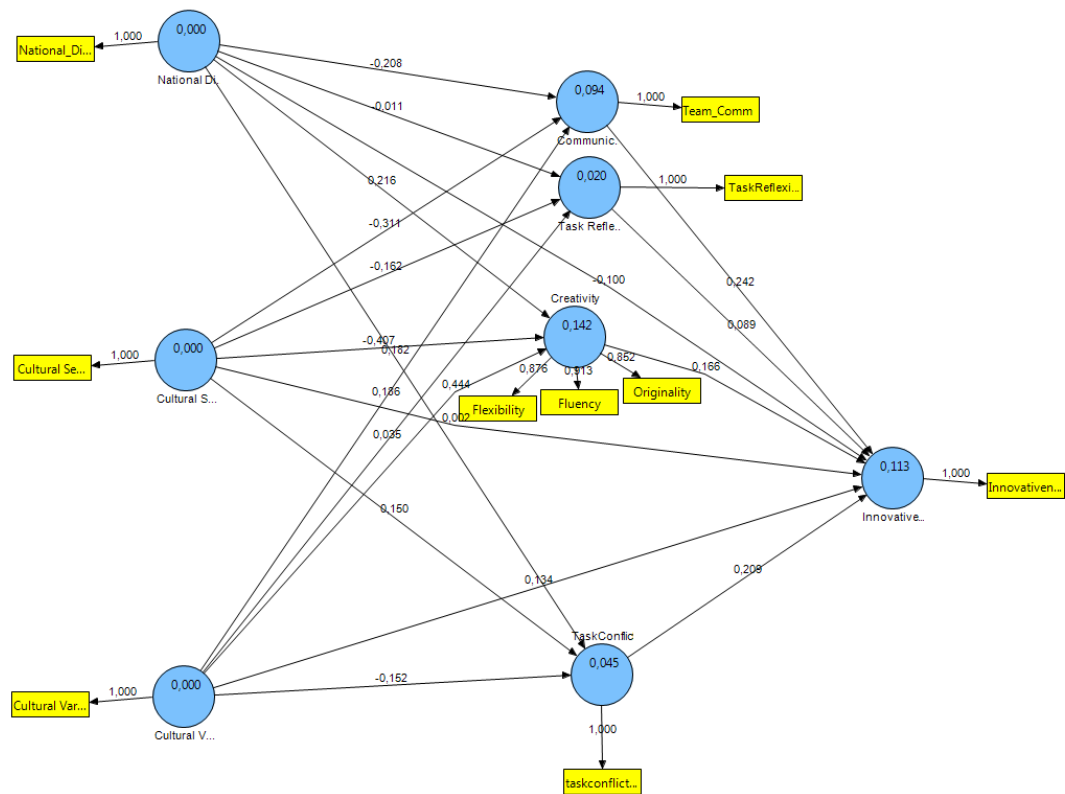
Appendix 15: Original PLS output for team processes



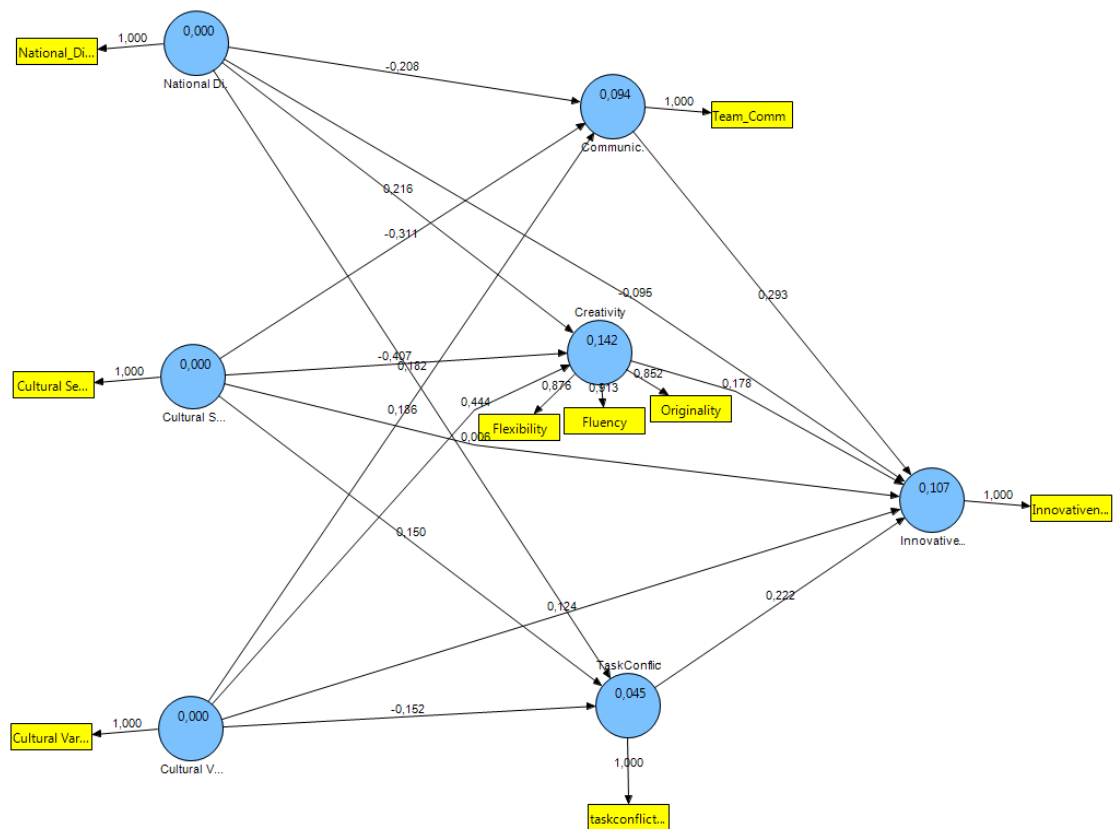
Appendix 16: Original PLS output for creativity



Appendix 17: Original PLS output for innovativeness 1



Appendix 18: Original PLS output for innovativeness 2



Appendix 19: Original SPSS output for multicollinearity test of structural models

Structural Model Communication:

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	4,372	,307		14,227	,000		
NationalDiversity	-,431	,204	-,208	-2,113	,037	,988	1,012
CulturalVariety	1,096	,861	,186	1,273	,206	,446	2,243
CulturalSeparation	-,825	,388	-,311	-2,125	,036	,446	2,243

a. Abhängige Variable: Communication

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,467	,263		1,777	,079		
CulturalVariety	,279	,426	,098	,655	,514	,440	2,271
CulturalSeparation	-,015	,195	-,012	-,079	,937	,426	2,349
Communication	-,104	,049	-,216	-2,113	,037	,949	1,054

a. Abhängige Variable: NationalDiversity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,157	,062		2,530	,013		
CulturalSeparation	,341	,031	,757	10,906	,000	,959	1,043
Communication	,015	,012	,090	1,273	,206	,922	1,085
NationalDiversity	,016	,025	,046	,655	,514	,948	1,055

a. Abhängige Variable: CulturalVariety

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,261	,138		1,893	,061		
Communication	-,055	,026	-,146	-2,125	,036	,950	1,053
NationalDiversity	-,004	,054	-,005	-,079	,937	,943	1,060
CulturalVariety	1,630	,149	,735	10,906	,000	,987	1,013

a. Abhängige Variable: CulturalSeparation

Structural Model Task Reflexivity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	3,714	,311		11,927	,000		
NationalDiversity	-,023	,207	-,011	-,111	,912	,988	1,012
CulturalVariety	,198	,873	,035	,227	,821	,446	2,243
CulturalSeparation	-,420	,393	-,162	-1,068	,288	,446	2,243

a. Abhängige Variable: taskReflexivity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,033	,244		,137	,891		
CulturalVariety	,174	,433	,061	,401	,689	,446	2,240
CulturalSeparation	,071	,196	,056	,363	,717	,441	2,266
taskReflexivity	-,006	,051	-,011	-,111	,912	,980	1,020

a. Abhängige Variable: NationalDiversity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,218	,053		4,081	,000		
CulturalSeparation	,335	,031	,743	10,694	,000	,971	1,030
taskReflexivity	,003	,012	,016	,227	,821	,981	1,019
NationalDiversity	,010	,024	,028	,401	,689	,989	1,011

a. Abhängige Variable: CulturalVariety

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,126	,127		,993	,323		
taskReflexivity	-,028	,026	-,073	-1,068	,288	,992	1,008
NationalDiversity	,019	,054	,025	,363	,717	,989	1,011
CulturalVariety	1,630	,152	,735	10,694	,000	,982	1,018

a. Abhängige Variable: CulturalSeparation

Structural Model Task Conflict

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	2,562	,343		7,475	,000		
NationalDiversity	,411	,228	,182	1,803	,075	,988	1,012
CulturalVariety	-,970	,961	-,152	-1,009	,315	,446	2,243
CulturalSeparation	,434	,433	,150	1,001	,319	,446	2,243

a. Abhängige Variable: TaskConflict

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	-,194	,190		-1,022	,310		
CulturalVariety	,245	,427	,086	,574	,568	,443	2,259
CulturalSeparation	,036	,193	,028	,188	,851	,441	2,265
TaskConflict	,081	,045	,182	1,803	,075	,988	1,012

a. Abhängige Variable: NationalDiversity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,254	,038		6,710	,000		
CulturalSeparation	,335	,031	,744	10,849	,000	,988	1,012
TaskConflict	-,011	,011	-,070	-1,009	,315	,966	1,036
NationalDiversity	,014	,025	,040	,574	,568	,958	1,043

a. Abhängige Variable: CulturalVariety

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	-,040	,102		-,398	,691		
TaskConflict	,024	,024	,069	1,001	,319	,965	1,036
NationalDiversity	,010	,055	,013	,188	,851	,955	1,047
CulturalVariety	1,651	,152	,744	10,849	,000	,988	1,013

a. Abhängige Variable: CulturalSeparation

Structural Model Creativity

Koeffizienten^a

Modell		Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
		Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1	(Konstante)	-1887,637	5583,606		-,338	,736		
	Communication	,43,542	971,618	,006	,045	,964	,552	1,812
	NationalDiversity	-1208,158	1555,913	-,083	-,776	,439	,929	1,077
	CulturalVariety	-1791,117	6429,358	-,044	-,279	,781	,437	2,289
	CulturalSeparation	-2,107	2935,861	,000	-,001	,999	,426	2,349
	taskReflexivity	507,046	850,874	,071	,596	,553	,758	1,320
	TaskConflict	580,735	777,443	,090	,747	,457	,730	1,370

a. Abhängige Variable: Creativity

Koeffizienten^a

Modell		Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
		Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1	(Konstante)	3,835	,447		8,586	,000		
	NationalDiversity	-,266	,165	-,128	-1,610	,111	,948	1,054
	CulturalVariety	,649	,687	,110	,946	,347	,441	2,269
	CulturalSeparation	-,490	,311	-,185	-1,576	,118	,437	2,288
	taskReflexivity	,406	,081	,395	5,003	,000	,960	1,042
	TaskConflict	-,379	,074	-,412	-5,141	,000	,934	1,071
	Creativity	5,013E-7	,000	,004	,045	,964	,981	1,020

a. Abhängige Variable: Communication

Koeffizienten^a

Modell		Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
		Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1	(Konstante)	,176	,373		,472	,638		
	CulturalVariety	,293	,428	,104	,685	,495	,439	2,280
	CulturalSeparation	-,014	,196	-,011	-,069	,945	,426	2,349
	taskReflexivity	,050	,057	,101	,884	,379	,761	1,314
	TaskConflict	,042	,052	,096	,818	,416	,731	1,369
	Creativity	-5,389E-6	,000	-,078	-,776	,439	,987	1,013
	Communication	-,103	,064	-,214	-1,610	,111	,567	1,763

a. Abhängige Variable: NationalDiversity

Koeffizienten^a

Modell		Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
		Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1	(Konstante)	,188	,088		2,131	,036		
	CulturalSeparation	,339	,032	,753	10,667	,000	,952	1,050
	taskReflexivity	-,005	,014	-,026	-,330	,742	,756	1,323
	TaskConflict	-,005	,013	-,031	-,381	,704	,726	1,377
	Creativity	-4,706E-7	,000	-,019	-,279	,781	,981	1,019
	Communication	,015	,016	,087	,946	,347	,557	1,795
	NationalDiversity	,017	,025	,049	,685	,495	,927	1,079

a. Abhängige Variable: CulturalVariety

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,265	,196		1,347	,181		
taskReflexivity	-,003	,030	-,007	-,088	,930	,755	1,325
TaskConflict	,000	,028	,000	,005	,996	,725	1,379
Creativity	-2,657E-9	,000	,000	-,001	,999	,981	1,020
Communication	-,054	,034	-,142	-1,576	,118	,567	1,765
NationalDiversity	-,004	,055	-,005	-,069	,945	,923	1,084
CulturalVariety	1,629	,153	,734	10,667	,000	,976	1,024

a. Abhängige Variable: CulturalSeparation

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	1,123	,673		1,668	,099		
TaskConflict	,107	,095	,119	1,129	,262	,735	1,360
Creativity	7,583E-6	,000	,054	,596	,553	,984	1,016
Communication	,527	,105	,541	5,003	,000	,702	1,425
NationalDiversity	,168	,190	,083	,884	,379	,930	1,075
CulturalVariety	-,260	,786	-,045	-,330	,742	,437	2,288
CulturalSeparation	-,032	,359	-,012	-,088	,930	,426	2,349

a. Abhängige Variable: taskReflexivity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	4,644	,569		8,163	,000		
Creativity	1,038E-5	,000	,067	,747	,457	,986	1,014
Communication	-,589	,114	-,542	-5,141	,000	,710	1,408
NationalDiversity	,170	,208	,075	,818	,416	,929	1,076
CulturalVariety	-,327	,859	-,051	-,381	,704	,437	2,288
CulturalSeparation	,002	,393	,001	,005	,996	,426	2,349
taskReflexivity	,128	,113	,115	1,129	,262	,765	1,307

a. Abhängige Variable: TaskConflict

Structural Model Innovativeness

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	-2,538	4,890		-,519	,605		
Creativity	7,353E-5	,000	,081	,806	,422	,981	1,020
Communication	1,236	,850	,195	1,454	,149	,552	1,812
NationalDiversity	-,813	1,366	-,062	-,595	,553	,922	1,084
CulturalVariety	8,023	5,630	,215	1,425	,158	,436	2,291
CulturalSeparation	-1,218	2,570	-,072	-,474	,637	,426	2,349
taskReflexivity	,702	,746	,108	,941	,349	,755	1,325
TaskConflict	1,019	,683	,175	1,493	,139	,725	1,379

a. Abhängige Variable: Innovativeness

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	-1629,716	5603,430		-,291	,772		
Communication	-,75,874	984,691	-,011	-,077	,939	,539	1,854
NationalDiversity	-1121,233	1562,616	-,077	-,718	,475	,924	1,082
CulturalVariety	-2551,419	6510,388	-,062	-,392	,696	,428	2,338
CulturalSeparation	115,251	2945,077	,006	,039	,969	,425	2,355
taskReflexivity	435,800	857,074	,061	,508	,612	,750	1,334
TaskConflict	478,471	789,201	,074	,606	,546	,711	1,407
Innovativeness	96,344	119,567	,087	,806	,422	,909	1,100

a. Abhängige Variable: Creativity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	3,795	,445		8,530	,000		
NationalDiversity	-,245	,165	-,118	-1,486	,141	,941	1,063
CulturalVariety	,487	,692	,083	,705	,483	,429	2,330
CulturalSeparation	-,457	,310	-,172	-1,473	,144	,435	2,300
taskReflexivity	,384	,082	,374	4,677	,000	,927	1,079
TaskConflict	-,389	,074	-,423	-5,286	,000	,925	1,081
Innovativeness	,018	,013	,116	1,454	,149	,924	1,082
Creativity	-8,598E-7	,000	-,006	-,077	,939	,974	1,027

a. Abhängige Variable: Communication

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,163	,375		,436	,664		
CulturalVariety	,331	,435	,117	,761	,449	,430	2,327
CulturalSeparation	-,019	,197	-,015	-,098	,922	,425	2,355
taskReflexivity	,053	,057	,108	,932	,354	,755	1,325
TaskConflict	,047	,053	,106	,895	,373	,714	1,400
Innovativeness	-,005	,008	-,063	-,595	,553	,906	1,103
Creativity	-5,018E-6	,000	-,073	-,718	,475	,979	1,021
Communication	-,097	,065	-,201	-1,486	,141	,552	1,811

a. Abhängige Variable: NationalDiversity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,191	,088		2,174	,032		
CulturalSeparation	,335	,032	,744	10,554	,000	,944	1,059
taskReflexivity	-,006	,014	-,037	-,462	,645	,749	1,335
TaskConflict	-,007	,013	-,048	-,589	,558	,711	1,407
Innovativeness	,003	,002	,102	1,425	,158	,923	1,083
Creativity	-6,604E-7	,000	-,027	-,392	,696	,975	1,025
Communication	,011	,016	,066	,705	,483	,542	1,844
NationalDiversity	,019	,025	,054	,761	,449	,925	1,081

a. Abhängige Variable: CulturalVariety

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	,259	,198		1,310	,194		
taskReflexivity	-,001	,031	-,003	-,040	,968	,747	1,338
TaskConflict	,002	,028	,006	,078	,938	,708	1,412
Innovativeness	-,002	,004	-,034	-,474	,637	,905	1,105
Creativity	1,460E-7	,000	,003	,039	,969	,974	1,027
Communication	-,051	,035	-,135	-1,473	,144	,552	1,811
NationalDiversity	-,005	,056	-,007	-,098	,922	,919	1,088
CulturalVariety	1,641	,156	,740	10,554	,000	,950	1,053

a. Abhängige Variable: CulturalSeparation

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	1,147	,674		1,702	,092		
TaskConflict	,092	,096	,103	,956	,341	,715	1,398
Innovativeness	,014	,015	,089	,941	,349	,912	1,097
Creativity	6,501E-6	,000	,047	,508	,612	,976	1,024
Communication	,505	,108	,518	4,677	,000	,669	1,495
NationalDiversity	,178	,190	,088	,932	,354	,928	1,078
CulturalVariety	-,367	,795	-,064	-,462	,645	,428	2,337
CulturalSeparation	-,015	,360	-,006	-,040	,968	,425	2,355

a. Abhängige Variable: taskReflexivity

Koeffizienten^a

Modell	Nicht standardisierte Koeffizienten		Standardisierte Koeffizienten	T	Sig.	Kollinearitätsstatistik	
	Regressionskoeffizient B	Standardfehler	Beta			Toleranz	VIF
1 (Konstante)	4,592	,566		8,111	,000		
Innovativeness	,023	,016	,137	1,493	,139	,925	1,081
Creativity	8,408E-6	,000	,054	,606	,546	,978	1,023
Communication	-,604	,114	-,555	-5,286	,000	,705	1,419
NationalDiversity	,185	,207	,082	,895	,373	,927	1,079
CulturalVariety	-,507	,862	-,079	-,589	,558	,429	2,333
CulturalSeparation	,030	,390	,011	,078	,938	,425	2,355
taskReflexivity	,108	,113	,097	,956	,341	,755	1,325

a. Abhängige Variable: TaskConflict

