

**Developing an instrument to measure readiness  
for change in the German public sector -  
comparative study between civil servants and  
non-civil servants of the Deutsche Bahn AG**

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**Abstract**

The aim of the study is to develop an instrument that can be used to gauge readiness for change on the individual level of civil servants and non-civil servants in the German public sector, exemplified by Deutsche Bahn Aktiengesellschaft. The instrument is based on existing readiness for change models and is extended by the concepts of Person-Organisation, Person-Job fit and need for security. Also, for the first time the relevance of the concept of Public Service Motivation in a German context is tested and its implication on the new instrument explored.

The underlying philosophical stance is that of a positivist. With the help of a mono-method approach, a web-based questionnaire is used to gather the quantitative data from 524 civil servants and non-civil servants at the Deutsche Bahn Aktiengesellschaft. The findings are obtained through descriptive statistics and statistical techniques.

A new instrument to measure readiness for change in the German public sector is presented. In addition, the results yield the antecedents - Person-Organisation fit, Person-Job fit and need for security - on readiness for change. For the first time, the existence of Public Service Motivation in Germany is proved while an impact on readiness for change is denied.

The study advocates a better theoretical and practical understanding of the measurement of readiness for change in the German public sector. The findings confirm differences between civil servants and non-civil servants concerning their readiness for change level. It also reveals the existence of different subcultures within one company. The findings offer practical relevance for the human resource management, motivation factors and incentive systems with influences on the company culture and change behaviour and points out the necessity of an individual-oriented human resource function at the Deutsche Bahn Aktiengesellschaft.

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**List of abbreviations**

AEG	Allgemeines Eisenbahngesetz	General Railway Act
ASA		Attraction-selection-attrition
BENeuglG	Gesetz zur Zusammenführung und Neugliederung der Bundeseisenbahnen	Act for the Unification and Reorganisation of the Federal Railways
BEV	Bundeseisenbahnvermögen	Federal Rail Property
BGB	Bürgerliches Gesetzbuch	German civil code
BLV	Bundeslaufbahnverordnung	Federal Law of Career for civil servants
BMVBW	Bundesministerium für Verkehr, Bau- und Wohnungswesen	Federal Ministry of Transport, Building and Housing
Bn	Milliarde	Billion
BPersVG	Bundespersonalversetzungsgesetz	Federal Representation Law
DB	Deutsche Bundesbahn	German Federal Railway
DB AG	Deutsche Bahn AG	
DBGrG	Deutsche Bahn Gründungsgesetz	German Railway Foundation Law
DB ML AG	Deutsche Bahn Mobility Logistics Aktiengesellschaft	Deutsche Bahn Mobility Logistics public limited company
Df		Degrees of freedom
DR	Deutsche Reichsbahn	East German railways
EBA	Eisenbahnbundesamt	Federal Railway Authority
e.g.	zum Beispiel	exempli gratia
etc.	et cetera	et cetera
ENeuOG	Eisenbahnneuordnungsgesetz	Act for the Railroad Reorganisation
FRG	Bundesrepublik Deutschland	Federal Republic of Germany
GDR	Deutsche Demokratische Republik	German Democratic Republic
HRM	Personalarbeit	Human Resource Management

## List of abbreviations

i.e.	Id est	Id est
KGSt	Kommunale Gemeinschaftsstelle für Verwaltungsmanagement	Municipal association for administration management
KMO	Kaiser-Meyer-Olkin	Kaiser-Meyer-Olkin
NPM		New Public Management
NSM		New Steering Model
OECD		Organisation for Economic Co-operation and Development
OCQ-C, P, C		Organisational Change Questionnaire-Climate of Change, Process, and Readiness
PCA		Principal component analysis
P-E fit		Person-Environment fit
P-G fit		Person-Group fit
P-J fit		Person-Job fit
P-O fit		Person-Organisation fit
PSE		Public Service Ethos
PSM		Public Service Motivation
P-V fit		Person-Vocation fit
Sig.		Significant
SPSS		Statistical Product and Service Solutions
t		T-test
UK		United Kingdom
U.S.		United States of America
WW		World War

### **1 Introduction**

Chapter 1 provides the reader with an overview of the topic of the thesis. It includes the background and problem description, the research aims, research objectives and hypotheses, the description of the significance of the study as well as the content of the thesis chapter by chapter.

This introductory chapter deals with basic questions of the thesis. The thesis points out the effects of and reactions to environmental changes on the behaviour and preferences of civil servants and non-civil servants in the German public sector through a study conducted at the Deutsche Bahn Aktiengesellschaft (DB AG).

#### **1.1 Importance and state of the research field**

Organisations, particularly in the public sector, have been faced with structural and workforce changes and an increasingly competitive and volatile environment. Due to the constant state of flux in the environment in which organisations operate, change is necessary whether an organisation is ready for it or not. A glance at the relevant literature clearly documents a high rate of failure and a low rate of success in the implementation of major changes. Ghoshal and Bartlett (2005, p.195) argue that for *“every successful corporate transformation, there is at least one equally prominent failure”*. Other researchers estimate that up to 70% of major changes fail and that most companies try to hide the failure from the public (Washington and Hacker 2005). A survey carried out by IBM in 2004 declares that less than 10% of all change programs are successful (Karp and Helgo 2008). Theoretical experts and practitioners are convinced that many still get change wrong (By 2007). The lack of necessary knowledge and skills to implement fundamental organisational changes seems to be the main reason for the failures.

Change management is not a guarantee for an improved performance in the organisation. However, changes are essential to follow the aim of adjusting the company to its external environments. This thesis conducts a thorough view of the major topic change, which will be discussed in a public sector context. The impact of change events, the individual and organisational values and the motivation of civil servants and non-civil servants will be analysed. For a better understanding, the most important research fields of the thesis will be delineated.

### **Terminology delimitation in the field of change**

The process of change as a dynamic improvement is described very well by the term “*change management*” (Gattermeyer and Al-Ani 2001, p.14). Generally speaking, change management is the sum of all activities that are necessary to initiate and implement new strategies, structures, systems and behaviours (Al-Ani 2000). The activities of change management focus on the initiation of changes and the realisation of defined targets. Worren, Ruddle and Moore (1999) define change management as a large-scale, transformational movement. It is a transfer of an organisation, team and individual from the current status to a planned one. Change management was and still is the main topic concerning all types and sizes of organisational changes from co-operations, concentrations, or mergers and acquisitions to the introduction of new software.

The term change management is closely linked to organisational change and organisational development. Organisational change includes activities that enhance the overall performance of the organisation. Organisational change is a broad concept and stands for any kind of managed change (Cummings and Worley 2009). The activities are often project-oriented and address an overall problem or goal in the organisation (Anon 2011a). As opposed to change management, Cummings and Worley (2009, p.2) define organisational development as the

*“system-wide application and transfer of behavioural science knowledge to the planned development, improvement, and reinforcement of the strategies, structures, and processes that lead to organisation effectiveness”.*

It is an attempt to change the beliefs, attitudes, values, and structure of an organisation. Organisational development refers to the evolution of the organisation during overall organisational change activities; for example, training the non-civil servants so they are able to resolve a major problem. Organisational development is an outcome of organisational change activities (Anon 2011a).

Changes in practice usually create a high level of uncertainty among individuals. This uncertainty can be termed as resistance to change or readiness for change. Resistance to change and readiness for change are part of the total research field change management and the focus of this study. Some researchers use these concepts interchangeably; others see the readiness for change as a precursor to overcoming resistance to change (Armenakis, Harris and Mossholder 1993). Readiness for change can be understood as the level of agreement to change before the change is rolled out. In accordance to Holt *et al.* (2007a, p.233):



*“This assessment (of change readiness) enables leaders to identify gaps before that may exist between their own expectations about the change initiative and those of other members. If significant gaps are observed and no action taken to close those gaps, resistance would be expected, and therefore, change implementation would be threatened”.*

To reduce the uncertainty and to increase the willingness for change, the persons who are responsible for the changes called change agents, need a measurement tool to assess how ready an organisation is for change (Armenakis, Harris and Mossholder 1993). The results of the measurement are the jumping base for the change activities.

When describing and selecting the relevant measurement models, it was found that the clusters developed by Holt *et al.* (2007a) were very useful for this study. Holt *et al.* (2007a) as the leading researchers in this field clustered the approaches in change antecedents which lead to a special change reaction. This can be described as the reason for the explicit reaction to change (Oreg, Vakola and Armenakis 2012). The instruments measure the level of readiness in the change process, change content, change context and the individual attributes (Holt *et al.* 2007c).

By reviewing the literature, a number of methods have been synthesised and adapted for this study. The study therefore focuses on the general readiness for change and the specific readiness for change due to the fact that people react differently to change in general and to a special change occasion.

### **Terminology delimitation in the field of Person-Environment concept**

New Public Management (NPM), a major reform wave in the public sector and trigger of the change discussion in the public sector has been adopted in many countries with the goal of moving bureaucracies into a more market-oriented and customer-oriented direction (Noblet *et al.* 2005)

Although studies about NPM have confirmed the contribution to a radical change in business orientation, there has not been any research to date that has examined civil servants' and non-civil servants' values in this context in Germany. In addition, the fit between the values of civil servants and non-civil servants and the environment, in this case the organisation and/or the job are still almost unknown in Germany (Vigoda-Gadot and Meiri 2008). A major contribution of this study is the comparison of both groups: civil servants and non-civil servants in the same organisational environment. The Person-Environment fit (P-E fit) is an umbrella of the research on personal fit concepts. The Person-Organisation fit (P-O fit) stands for the congruence between the

values of the individual and the organisation, while the Person-Job fit (P-J fit) describes the compatibility of individuals with a specific job (Kristof 1996).

This study concentrates on both the P-O fit and P-J fit. Further concepts, such as the Person-Group fit (P-G fit), which is the compatibility of individuals and the work group are left out due to the assumption that the highest influence on organisational performance is based on the P-O fit and P-J fit. A literature review has strongly related the positive outcome of a high P-O fit and P-J fit on performance, identification with the organisation and job satisfaction (Lauver and Kristof-Brown 2001).

Therefore, the study is a continuation and deepening of the P-O fit and P-J fit research by adding the component of civil servants and non-civil servants in the public sector. The overall research idea is the relation of the P-O fit and P-J fit to the readiness for change of civil servants and non-civil servants in the same organisation.

### **Terminology delimitation in the field of public sector**

The two major areas in the field of the public sector those are relevant for this thesis can be identified as public administration and public management.

Woodrow Wilson, who is generally considered as the founder of public administration in the 1880s, separated the field of study and practice of public administration from politics (Melchior and Melchior 2001). Public administration *“was intended as a safeguard against the influence of particularistic values in government”* (Melchior and Melchior 2001, p.253). For Wilson, public administrators must be responsive to the *“wishes of the electorate”*. The job involves caring for and implementing policy in a manner consistent with the mandates issued by the voters’ elected representatives (Melchior and Melchior 2001). Lorenz von Stein, a German professor who taught in Europe during this time, contended that public administration relies on many disciplines such as sociology, political science, administrative law and public finance (Rutgers 1994). He viewed public administration as an integrating science, and argued that public administrators should be concerned with both theory and practice. He declared that public administration is a science because knowledge is generated and evaluated according to scientific methods (Rutgers 1994).

Public management is seen as a craft, i.e. skilled individuals performing management tasks in the public sector (Lynn 2009). According to Ott (1992, p.1),

*“public management is a major segment of the broader field of public administration. Public management focuses on public administration as a profession and on the public manager as a practitioner”.*

For Lynn (200), public managers as workers in the field of public administration have to warrant the use of public authority by the motivation and direction of the actions in and out of the government toward the creation and achievement of goals.

It is the task of a public administrator to know the machinery of government and the political and legal environment in order to understand the business of politics.

The discussion between researchers about the differences and similarities of the terms public administration and public management has been on-going. For a number of researchers such as Waldo (Rosenbloom and McCurdy 2006) and Van Riper (1990) both terms have an equal meaning. Both methods represent having goals, using resources to achieve the goals and being responsible for implementing and managing resources (Farnham and Horton 1996). On the one hand, public organisations manage in the sense of making decisions and plans; on the other hand, they establish procedures which link the policy with practice.

Other researchers hold the opinion that the public organisation administrates and the private organisation manages. Rosenbloom, Kravchuk and Clerkin (2009, p.15) argue the term *“administration”* shows more respect to the constitutional and political foundations of governance than *“management”*. As an argument for differentiation of public administration and management, Rosenbloom, Kravchuk and Clerkin (2009, p.15) state that *“those who define public administration in managerial terms tend to minimize the distinction between public and private administration”*.

Further ideas lead in a different direction: public administration is both an area of study as a subfield of political and administrative science and an area of action and practice. The field of public administration is divided into public, business, health, educational, and other parts of administration. In the 19<sup>th</sup> century, Lorenz von Stein defined public administration *“as the organic activity of the state”* (Derlien and Peters 2008, p.16). Furthermore, the German sociologist Max Weber stated that *“political domination in everyday life means public administration”* (Derlien and Peters 2008, p.3).

In this case, the civil servants and non-civil servants are the research subjects of this thesis. In Germany, the traditional structure of the civil service has always been of great significance and relevance to the German public personnel system and has also influenced the system of the non-civil servants in the public sector. The dual employment structure of civil servants and non-civil servants in the public sector is embedded in Germany's historical traditions (Kuhlmann and Röber 2004). To facilitate understanding, the clusters of people who are subject to this thesis should be differentiated: civil servants, public servants and non-civil servants. Civil servants and

public servants are persons in the public sector employed for a government department or agency. The civil servants have the most secure employment, are appointed, employed and removed by law and are paid by a scheme of a pay regulation. Public servants are employed by the counties, state or Federal Government and work with an individual work contract. They remain private employees. In this thesis the non-civil servants are private employees employed by the former publicly owned company DB AG. They neither enjoy the benefits of the civil servants nor the benefits of the public servants in the public sector. In the upcoming text, the focus is placed on the civil servants and non-civil servants.

While civil servants are regulated by public administrative law, the contracts of non-civil servants fall under private law. Furthermore, working conditions such as salary, health care and pension schemes, and the cadre system (life-long career path) are determined by specific laws, whereas the working conditions of non-civil servants in the public sector are a result of collective bargaining between the employer and the unions (Reichard 1997). Over the last decades, the clear distinction between the two groups of civil servants and non-civil servants has become more and more narrow and diffuse (Reichard 1997).

Especially for formerly publicly owned and now privatised companies such as the DB AG in Germany where the dualism of the employment is practised, the situation turns out to be problematic. Formally, both groups are treated equally by the management, works council and the human resource department. However, this study shows that the dualism of employment has led to a subculture at the DB AG with different mindsets and readiness for change levels which the management and the workers council should consider.

A reason for the problematic development might lay in the Public Service Motivation (PSM). PSM represents an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions. The PSM assumes that civil servants are characterised by a pronounced ethic to serve the public as opposed to the non-civil servants. Perry (1996) determined four drivers that form a multi-dimensional scale to measure the PSM: attraction to policy-making, commitment to public interest, compassion, and self-sacrifice. The concept of PSM is used to explain the differences between civil servants and non-civil servants in the public and private sectors. A significant amount of research has examined the topic of PSM but so far not in a German context. The author's research indicates that the PSM is a main reason for the existence of this subculture at the DB AG.

### **1.2 Research case**

The study is embedded in an overarching context of the changing environment in the public sector. The reform wave NPM 'moved' the public sector towards more efficiency, market-orientation and customer-orientation. One of the tools to reach the targets used in the NPM context is the privatisation of publicly owned companies such as Deutsche Lufthansa, Deutsche Post, Deutsche Telekom or Deutsche Bahn.

As a result of the search for cost-cutting possibilities and the ways to increase efficiency in the transportation sector, the major German railway reform came into effect in January 1994. The idea was discussed in West Germany in the 1980s within in the context of the NPM wave. It was given added urgency with the fall of the Berlin Wall in 1989, followed by the collapse of the Communist regime in East Germany leading to the German reunification. The four key elements of the rail reform were:

- (1) The merger of Deutsche Bahn (DB), the railway of the former West Germany with Deutsche Reichsbahn (DR), the railway serving the former East Germany to create DB AG as a formally privatised company with all the shares held by the Federal Government
- (2) The separation of the Federal Government's obligation to fund the national railway from the public and corporate obligations of the railway itself
- (3) The transfer of responsibility for funding and procuring regional rail passenger services to the Federal States
- (4) The transfer of non-civil servants of DB who had and kept the status of civil servant to either DB AG or special property of the state (*Bundeseisenbahnvermögen* BEV) which was set up to take over any assets of the railway

The last reform is of major interest to this thesis because it led to a dual employment system of civil servants and non-civil servants at the DB AG and created several problems. As a privatised and service oriented company, DB AG follows the primary aims of increasing image building and awareness level of its products in order to achieve its economic aims, such as maximising profit. Due to these aims, DB AG depends on the efficiency and motivation of its civil servants and non-civil servants. DB AG employs approximately 46,000 civil servants who swore to serve the welfare of the Federal Republic of Germany and the organisation is now faced with turning them (at least mentally) into non-civil servants who must fight for economic survival, efficiency and profit-making.

The study was conducted via an online-survey in March 2013 at headquarters of the DB AG passenger transport in Frankfurt am Main, Germany. The author launched the

survey with the help of Questback public limited company, an external market research institute. The study was reliable and answered all the varied requirements of a research study.

### **1.3 Research problem**

Change is a phenomenon that individuals and organisations face on a daily basis. Successful implementation of organisational change depends on how individuals react to those changes (Piderit 2000). Regardless of the impact that a change could have on an individual or organisation, it is only human to resist change. Resistance to change is cited frequently in the research and practitioners' literature on organisational change - usually as an explanation for why efforts to change fall short of expectations or fail altogether. The organisation and individuals that fail to respond run the risk of being passed by other more nimble competitors or ceasing to exist (Self 2007).

The holistic concept of change management is manifold. On aspect of change and the topic of this thesis is the measurement of change readiness with the help of readiness for change models.

The focus of the thesis "readiness for change" is synthesized out of several, identified gaps in the research field:

1. While the international readiness for change research obtained a comprehensive volume, the topic needs to be expanded in Germany. The focus of the study is the development of a measurement model for readiness for change in the German public sector by applying existing readiness for change models to the novel environment of public sector.
2. A second gap to close is the measurement of the commitment and willingness of civil servants with respect to their readiness for change. It is the aim to determine whether civil servants are more or less open and prepared for change in comparison to non-civil servants in Germany. In this case study, German civil servants and non-civil servants work in the same company, often in the same team in the public sector. There is no study known to the author where this comparison within the same company was attempted.
3. A third gap is the role and relevance of Public Service Motivation and the impact on the individual readiness for change. The underlying emphasis is the public service ethos, which is a worldwide phenomenon and influences the readiness for change of civil servants (Hammerschmid, Meyer and Egger-Peitler 2009). This public service ethos refers to the PSM. Research on the concept of PSM has been

positioned in the American culture and was up until today not part of the German public sector research.

Several concepts are of primary interest to answer the identified gaps. The following concepts are used in the sense that they always refer to the differences between civil servants and non-civil servants:

- Readiness for change
- Person-Environment fit (P-E fit)
- Public Service Motivation (PSM)
- Need for security

### **1.4 Research aims**

The aim of the study is to develop and evaluate an instrument out of existing instruments that can be used to gauge readiness for change on an individual level for civil servants and non-civil servants in the public sector in Germany. The instrument will be based on existing readiness for change models and will be extended by the umbrella concept of the P-E fit. The concept of PSM and the concept of need for security will be part of the instrument as well if useful.

First, an adapted readiness for change model for civil servants and non-civil servants in the public sector will be developed and tested that encompasses general changes as well as specific change occasions. Second, existing differences between civil servants and non-civil servants will be tested against the background of the changing environment and the predisposition towards the P-E fit of civil servants and non-civil servants. Finally, the author adds two further concepts - the concept of PSM and the concept of need for security - to the study. For the first time, the concept of PSM will be measured in Germany and additionally, the relation of readiness for change and the Public Service Motivation concept will be assessed.

### **1.5 Research objectives**

The objectives of the research are to analyse the existing readiness for change models and the items used for assessing change behaviour. As the relevant items of the concepts P-E fit, PSM and need for security are also of primary importance, all items of these concepts will be tested and selected to form a new instrument which measures the readiness for change in the public sector with a focus on civil servants.

### **Development of the measurement concept: Readiness for change**

To develop the new measurement instrument out of existing models, the major models in the field of readiness for change and resistance for change have been collected to synthesise the relevant items for the new instrument. Further items from related studies have been added when they were positively determined of importance to the items for the new instrument.

Readiness for change can be measured in a general and in a specific change context. Due to the expectation, that the readiness for change level of civil servants and non-civil servants differ depending on the situation of change, these two measurement models for readiness for change will be used. The degree of influence of the context of change (general or specific) will be examined, two different measurement models (general and specific readiness for change) will be used and the one with a significant relevance on the individual readiness for change level will then be used as part of the new instrument.

### **Development of the measurement concept: Person-Environment fit**

Several assumptions have been derived from the literature about the umbrella concept of P-E fit that serving as an influential factor on the readiness for change. In addition, there are also sub concepts of the P-E fit such as P-O and P-J fit.

For example, because the P-O fit and P-J fit are important for the identification with the organisation and the job and display high relevance for the work outcome, they will be used to form the new measurement instrument. In order to demonstrate the relevance of the P-O fit and P-J fit, it is one objective of the study to calculate the relation of the P-O fit and P-J fit to readiness for change.

### **Development of the measurement concept: Public Service Motivation**

The relation of the PSM and readiness for change is also assessed as part of the new instrument.

As the third core field of the study, the PSM is a concept taken from the social science research field on motivation. PSM plays a major role in the public sector motivation research outside of Germany. So far, there has not been any PSM research conducted in Germany. Perry (1996) introduced a measurement scale that has been adopted by international researchers. In search for antecedents of readiness for change, the

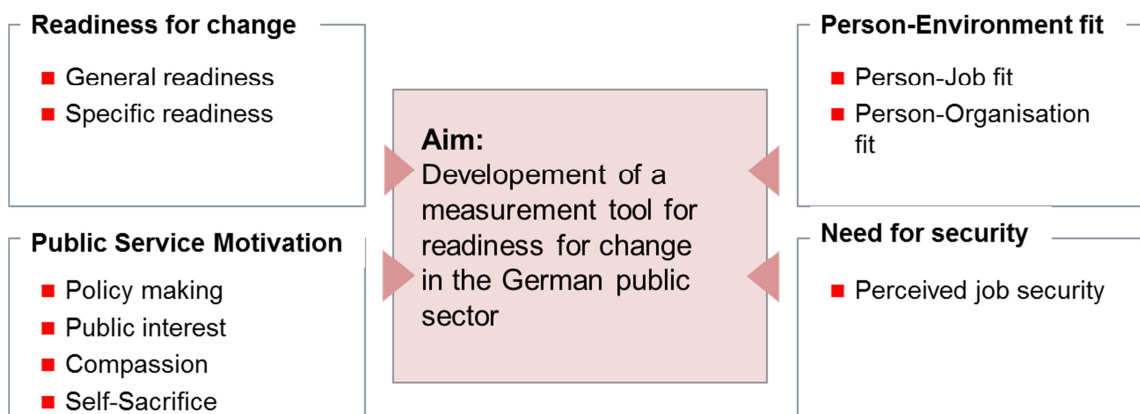


relation between the PSM of civil servants and non-civil servants and the general and specific readiness for change has been analysed.

### **Development of the measurement concept: Need for security**

The concept need for security plays an important role in the changing work environment. In the context of readiness for change, the impact of the concept need for security as a perceived security and a perceived job security will be tested. In Germany, especially job security is of high relevance in the job environment. By taking this concept into account, further interdependencies such as age, gender, tenure, etc. for the development of the new instrument will be reviewed.

All four concepts are measured in the study in order to assess the antecedence of readiness for change of civil servants and non-civil servants. With the help of control variables, the impact and role of age, gender, tenure to the organisation and education will be measured. Figure 1.1 shows the described concepts that will be explored to prove the relevance for the new instrument:



**Figure 1.1 Research framework**

### **1.6 Research hypotheses**

The major and overarching research driver is the search for the influencing factors on the readiness for change of civil servants in a formerly state-owned and now privatised company.

The purpose of this quantitative study is to find answers to the hypotheses in Table 1.1 derived from the stated research aim and the objectives.

Table 1.1 Overview of the research aim, research objectives and hypotheses

Research aim	Research objectives	Hypotheses	
To develop and evaluate an instrument to gauge readiness for change on an individual level for civil servants and non-civil servants of the public sector in Germany.	To analyse and explore the relevant items of the existing concepts of readiness for change	1	General readiness for change is lower than the specific readiness.
		2	General and specific readiness for change of civil servants is significantly lower than the general and specific readiness for change of non-civil servants.
The instrument will be based on existing readiness for change models extended by the concept of Person-Environment fit.	To analyse the concept of Person-Environment fit and its sub concepts	3	Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on specific readiness for change than on general readiness for change.
		4	Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.
The concept of Public Service Motivation and the concept of need for security will be part of the instrument.	To analyse the concept of Public Service Motivation	5	Public Service Motivation of civil servants is significantly higher than the Public Service Motivation of non-civil servants.
		6	Public Service Motivation has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.
	To examine the concept need for security	7	Need for security is significantly higher of civil servants than of non-civil servants.
		8	Need for security has a significantly higher impact on specific readiness for change than on general readiness for change.

### 1.7 Significance of the study

Of the utmost significance is the development of a new model out of existing models to measure readiness for change of civil servants and non-civil servants in the public sector in Germany. The speciality is the circumstances that the civil servants and non-civil servants are working for formerly state owned and today privatised company. This new instrument delivers a theoretical contribution for researchers and scientists as well as a practical contribution for the human resource department of the public sector and in this case, for the DB AG.

In theory, the study delivers a new instrument as a measurement tool for readiness for change for civil servants and non-civil servants in the public sector and expands the

knowledge of the existing research field of science. The concepts readiness for change, P-E fit, PSM and need for security tackle several research fields in the social sciences by combining economics with change management and human resource management. It deepens the knowledge of change management and behaviour in the public sector of civil servants and non-civil servants with a focus on privatised companies in Germany. The study explores the differences of civil servants and non-civil servants in their readiness for change, P-E fit, PSM and need for security. The study supports the fact of an emergent subculture in the company. The subculture resulted out of the long lasting dualism of employment of civil servants and non-civil servants within one company. Furthermore, the study delivers results for the existence of PSM in Germany. This is the first time that the concept of PSM has been tested in Germany. With the help of the instrument, a tool that assesses the motivational drivers of civil servants at work can be presented.

The contribution in practice deals with the concepts of recruitment, human resources management including the socialisation and integration of new employees, motivational factors and incentive systems with influences on the company's culture and change behaviour. The human resource department of the DB AG drives the need for the practical part of the study. The findings of the study support the strategic and operational business in human resource management. The study delivers reasons for an individually-candidate tailored and company specific recruitment process and the careful socialisation of the new employees. The transparency of motivational drivers is the precondition for incentive scheme and a major step to decrease the resistance to change of civil servants and non-civil servants at the DB AG. Finally, the study reveals the existence of subcultures within the company. The results of the study show that civil servants and non-civil servants need an individually tailored treatment by the human resource department and the management.

### **1.8 Thesis overview**

The thesis is divided into six chapters.

Chapter 1 introduces the reader to the research topic and outlines the research aims, the research objectives, hypotheses and the significance of the study. The chapter ends with the description of the research process.

Chapter 2 includes the literature review. It presents the major topic of change management with the concept of resistance to change and readiness for change, and describes the importance of fit to the job and organisation as important antecedents in

the change management context. It continues with the description of the world-wide public sector developments in the last decades, and then focuses on activities in Germany. PSM is then introduced as a highly interesting and typical form of motivation in the public sector. A focus of the study is to determine the differences between civil servants and non-civil servants in light of the above-mentioned topics. The chapter delivers the background information of the concepts: readiness for change, P-E fit with P-O and P-J fit, PSM and need for security. It concludes with the presentation of the case study of this thesis, the DB AG. It is important to note that each topic concludes with a statement of a research objective and selected hypotheses that are carried through the thesis.

Chapter 3 presents the research process of the study. It describes the research philosophy, the research design, the research method and the development of the scales that were used to conduct the study. For each topic in Chapter 3, the author explains the theoretical background and brings the reader closer to why she decided to use the chosen methods for the study. The author has identified herself as a positivist researcher and aligns the study to meet the positivistic-needs. The chapter describes the pilot study and the findings from it for the adaption of the actual study. Finally, some technical details are illustrated and the challenge of the language is presented.

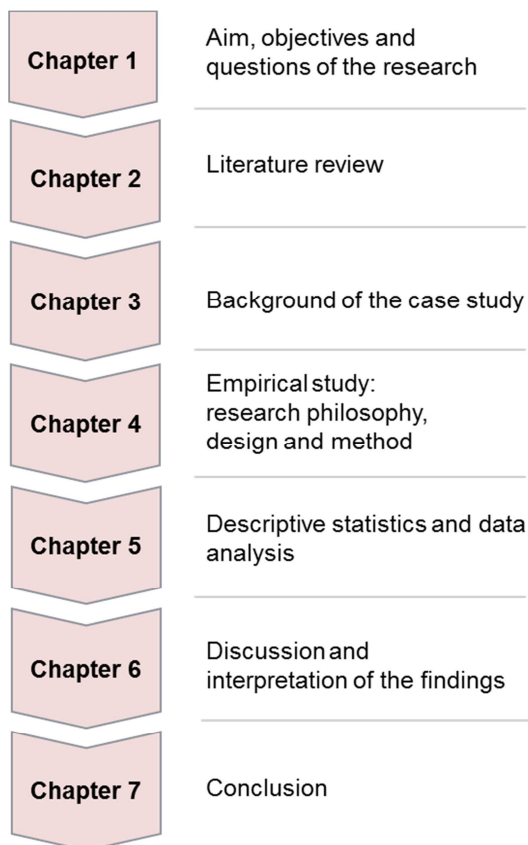
Chapter 4 covers the results of the study. In accordance with the research objectives and hypotheses stated in Chapter 2, the results of the quantitative research for each topic are presented. The research objectives and hypotheses embrace questions concerning the concepts of readiness for change; P-E fit which includes the P-O fit and P-J fit, PSM and need for security. In detail, the descriptive statistics are explained and applied to the fitting statistical methods for each research objective and hypotheses and comments the findings from a statistical point of view.

Chapter 5 attempts to provide an explanation of the results. The differences between civil servants and non-civil servants are confirmed. With the help of this chapter, the findings are interpreted.

Chapter 6 closes the study with the achievement of the aim and the description of the contribution to the research in theory and practice. The author points out the limitation of the study which became apparent as it went on and derives implications for the future research.

Each chapter ends with a chapter summary.

Figure 1.2 serves as guide for this thesis. It displays the major steps of the research process.



**Figure 1.2** Visualisation of the research progress

### **1.9 Chapter summary**

The first chapter introduces the reader to the topic of the thesis. While the change context is the overarching theme, further core topics such as readiness for change, public management, P-E fit, PSM as well as need for security are touched upon. The chapter presents the field of research, gives an insight into the relevant literature, presents the case study, explains the research process and ends with the description of each chapter.

Internal changes are important and necessary to keep track of changing market conditions and customer demands. However, changes also often lead to resistance from the employees. The influencing concepts to decrease the resistance to change and increase the readiness for change are the topics of the thesis. It is the aim to explore and develop a measurement tool for readiness for change for civil servants and non-civil servants in the public sector.

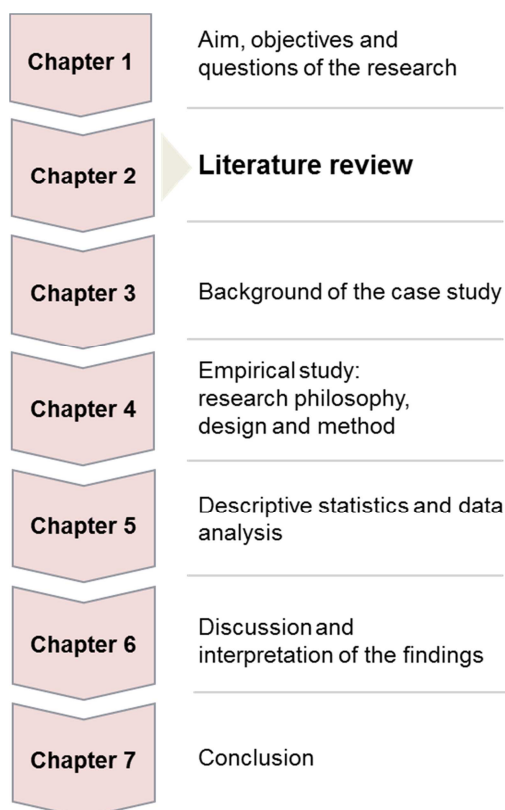
Chapter 2 contains a review of the relevant literature. The research objectives and hypotheses will be fully developed in the next chapter. The background of the study is

identified as well as the wider issues underlying the research problem and hypotheses. The chapter also discusses the problem itself and the theoretical framework needed to evaluate the problem.

## 2 Literature review

Why do organisations change? Chapter 2 investigates the topic change management, discusses the theory and model of change, refers to the theory of change and focuses on readiness for change in the German public sector. It examines meaning, structure and features of change and its impact on organisations. It gives an overview of the public sector as an example for tremendous change efforts in the last decades, explains the need for changes in the German public sector and the reform attempts of the public sector. A special focus is laid on the concept of PSM, its relevance for and impact on the public sector. PSM is mentioned for the first time in a German context.

To fulfil the research aim, this Chapter 2 aims to deepen the understanding of the concepts change, readiness for change, PE-fit, PSM and need for security in the public sector with the help of a literature review and its relevance for the new instrument to measure readiness for change in the German public sector (Figure 2.1).



**Figure 2.1 Research process: Chapter 2**

For each concept a literature review is conducted to present the actual state of research: The concept readiness for change and relevant measurement models are analysed and synthesised in order to identify relevant factors for the new measurement

instrument. Due to the fact that the PE-fit and its sub concepts determine the readiness for change between employees and the organisation as well as the employees and the job, the PE-fit is taken into consideration for the new measurement model. Several international researches have investigated the relevance of the PSM on the readiness for change level of employees. In this study, a focus is put on the PSM level of civil servants and non-civil servants in the German context. Finally, the concept of need for security is described and its relevance for the readiness for change discussed.

Out of the literature review and the identified literature gaps, the research objectives and hypotheses as the research guideline are derived, presented and explained.

### **2.1 Introduction**

The main challenge organisations are confronted with is recognising the need for change. The second challenge organisations face is to effectively deploy strategies to implement changes (Self and Schraeder 2009). Starting with a look at the objectives of change, Butler (1992, p.2) defines an organisation as a

*“social entity that has a purpose, has a boundary so that some participants are considered inside while others are considered outside and patterns the activities of participants into a recognizable structure”.*

In organisations, people interact with each other are managed by members of the entity to reach defined goals. Organisations act in an environment and have geographic and product boundaries (Senior and Swailes 2010).

McNabb and Sepic (1995, p.370) define change as the process of

*“altering people’s actions, reactions, and interactions to move the organisation’s existing state to some future desired state”.*

Change is an adoption of new ideas or behaviours in the environment. It implies two dimensions: the transformation of an organisation between two points in time and the progress the transformation makes (Barnett and Carroll 1995).

Reasons for change fell into two categories: internal and external drivers (Oakland and Tanner, 2007). The internal theories are based on “a life-cycle or development metaphor” (Barnett and Carroll 1995, p.220). The theories state that as an organisation grows, structural transformation should occur to the process and the products. Often an improvement of operational efficiency or/and product is necessary from time to time (Oakland and Tanner 2007). The external drivers can be the globalisation (changing



markets and demands), institutional constraints (change of laws and regulations) and technological innovations (availability of information) (Oakland and Tanner 2007).

### **2.1.1 Theoretical foundation of change**

Change Management in general has been a field of research for several decades and is defined as

*“the process of continually renewing an organisation’s direction, structure, and capabilities to serve the ever-changing needs of external and internal customers”* (Moran and Brightman 2001, p.111).

Change Management is not a distinct discipline with defined boundaries, but rather an interdisciplinary field where theory and practice are drawn from distinct fields of social sciences (Burnes 2004). In order to give an introduction into the research field and the related disciplines such as Organisational Psychology, Strategic Management or Human Resources Management, the chapter sets out to introduce three fundamental, theoretical foundations of change:

- The Individual Perspective School views organisational behaviour as the result of an individual's interaction with its environment. In order to change human behaviour, it would be necessary to modify the external stimuli on the one hand but predominantly to change the individual's understanding of their environment and themselves in the situation (Smith *et al.* 1982).
- The Group Dynamic School emphasizes the role of teams and work groups for behavioural change (Bernstein 1968). As such, Lewin (1947) emphasizes that in order to change human behaviour it is necessary to focus on the group level by changing norms, roles and values within that group (Cummings and Huse 1989).
- The Open System School emphasizes the importance of seeing the organisation as an entity, composed of interconnected sub-systems (Burnes 2004). Change as one part of the system, or within one sub-system, will have influence and impact on other parts of the organisational system (Macredie, Sandom and Paul 1998). Organisations also interact with external systems and can influence this external environment (Buckley 1968).

### **Change perspectives**

Researchers such as Coram and Burnes (2001) divide change management literature into two perspectives: the planned and the emergent perspective.

Planned change is an iterative and cyclical process. This approach of change is focused on the human side of the change process. The management and employees identify the need and field of change in the organisation and work out a change plan with the aim improving organisational output (Coram and Burnes 2001). Wooten and White (1999) criticise this perspective because the planned change is realisable only in a top-down, autocratic, rule-based company acting in a stable market-situation. It does not fit in a turbulent and chaotic environment where changes are a continuing and open-ended process. Planned changes are fixed to the plan and are therefore unable to attain a radical, transformational change. The planned changes are based on the willingness of people to change and it ignores the possibility of resistance. In contrast, Kotter (2007) supports the emergent change perspective.

The emergent change approach sees change as a continuous and more of a political-social than an analytical-rational process. The change progress can take place over years, be on-going multi-level, cross-organisation it continuously adapts to the aims of the change and the organisation's capabilities. Managers are part of the change process and responsible for the identification and implementation of the need for change. The emergent approach assumes a fast-changing environment. Coram and Burnes (2001) criticise the emergent change approach as fitting only to turbulent environments. By definition, it is not applicable in a stable environment. A further critical point is the focus on the political and cultural side of the emergent change which is seen as overemphasised (Coram and Burnes 2001).

Change can be defined by looking from an evolutionary perspective. The perspectives are: developmental, transformational and transitional. The developmental change, particularly adopted by supporters of the planned changes is a change that individual parts of the organisation have to deal with. It is a continuous manageable change (Gilley, Gilley and McMillan 2009). The transformational change would be achieved by numerous incremental changes and shift within the organisation. It is a disruptive, fundamental, radical shift (Burnes 2004). Finally, the most common transitional change improves the current situation of the organisation "*through minor, gradual changes in people, structure, procedures, or technology*" (Gilley, Gilley and McMillan 2009, p.76). Supporters of this change concept are Kanter *et al.* (1997) and Brown and Eisenhardt (1997).

### **2.1.2 Scope of changes**

Aside from the perspectives on change, the scope of change is as varied as the reasons for change. Major change dimensions such as strategic change, speed and impact of change are only a few examples.

Lines (2005) defines three organisational change categories which can be summarised under the term strategic change, structural change (such as the merger of two organisations or the downsizing of an organisation), system change (process changes like the change of the reward system or the production change from a human to a machine) and changes in the product portfolio or product quality (resulting from changes in the market and customer demand). Often, the change in the organisation is a mixture of all three. Changes can be initiated at any level of the organisation and can embrace small up to large changes.

Senior and Swailes (2010) combine in their investigation the varieties of change. The varieties display a mixture of depth and pace of changes influenced by the environment. The smooth incremental change stands for a slow, systematic and evolutionary change. This change version was common in the 1950s to 1970s. The bumpy incremental change describes the period when the smooth flow of change accelerates (Senior and Swailes 2010). The bumps stand for the movement of continental land masses where the fault enables periodic readjustments to occur without cataclysmic effect. The discontinuous change is characterised by rapid shifts in the culture, strategy or structure (Senior and Swailes 2010).

Judson (1991) analyses the effects that change has in general. The first effect is called operational effect which describes the change in the way the work is done. The effect causes individuals to change the way they perform the physical routines involved. Secondly, the behavioural change is a result of the personal involvement in the change process and is termed psychological effect. It is influenced by the person-related psychological effect of change. It arises as a side-effect of work changes in the fields of competence, learning, and performance. It is the modification individuals relate to and regard in their work (Judson 1991). Finally, the social effect describes the influence of changes on the social relationships between those doing the work and the other employees of the organisation, including managers and supervisors. All kind of changes in the work environment influences the work environment and therefore the relationship among the people in the work environment (Judson 1991).

Focusing the impact of change on the resources and workforces, Lawson and Price (2003) delineate three fundamental levels of changes. One level is called the

straightforward level which encompasses achieving outcomes without changing the way people work e.g. selling the non-core business and focussing on the core business. The adjustment level describes the reaction of employees who have to adjust their behaviour or learn new skills e.g. changes in the work process. Lawson and Price (2003) speak about the cultural change level in cases of fundamental changes e.g. the core business of the company changes in the organisation.

Beside the theoretical background of change, proper application and enforcement is essential to be able to implement a successful change process.

### **2.1.3 Change models**

Many theories and models exist on how to conduct changes. Models of change attempt to help the organisation to guide through the change process. The literature reveals numerous holistic models of change e.g. Bridge's Transition Model (Bridges and Bridges 2009), Prosci's ADKAR Model (Hiatt 2006) or Roger's Technology Adaption Curve (Rogers 2003). One of the cornerstone models for understanding organizational change was developed in 1947 by Kurt Lewin, a physicist and social scientist. His model, which still holds true even today, is known as Unfreeze–Change–Refreeze model and refers to the three-stage process of change. Lewin's change model is a simple and easily understood framework for managing change through three distinct stages (Lewin 1951). Lewin (1951) describes organizational change using the analogy of the changing shape of a block of ice. It starts with creating the motivation to change (unfreeze) and moves through the change process by promoting effective communication and empowering people to embrace new ways of working (change). The process ends when the organization returns to a sense of stability (refreeze), which is necessary for creating the confidence to embark on the next, inevitable change. Each of the three phases also proposes specific activities that address motivation, implementation, and adherence to organizational changes (Lewin 1951).

Researchers pointed out that the planned approach Lewin is too simplistic and mechanistic for a world where the organizational changes are a continuous process open to all (Kanter *et al.* 1992). The model is relevant to progressive and isolated projects and is not able to integrate the radical change transformation (Dawson 1994; Dunphy and Stace 1993). It is mentioned that Lewin ignored the role of power and politics in organisations. Lewin is seen as advocating a top-down approach on change management and do not take into account situations requiring changes from bottom to top (Dawson 1994).

Kotter (2008) developed an Eight-Step Model of change. In comparison to Lewin, it is a more extensive, multistep framework that includes leadership, employee involvement, rewards and communication. The eight steps are: establish a sense of urgency, form a guiding coalition, create a vision, communicate the vision, empower others to act, plan for and create short-term wins, consolidate improvements and institutionalise new approaches. Kotter's steps are based on a solid foundation of communication, empowerment, and focus (Kotter 2008). Following the change, it is important to embed new approaches so that people do not revert to old habits. Monitoring, feedback, and intervention are necessary for a period after the changes have occurred (Kotter 2008). The advantage of the model is the step-by step which is comfortable to follow the model. The model focuses on a buy-in of the employees through communication. It does not focus on change itself, but rather the acceptance and the preparation of this change. Downside is in the case of ignorance any steps, the change process fails completely (Kotter 1996). Due to the high amounts of steps, the process takes time. The linearity of the model can lead to wrong assumptions. Once process has begun, it is difficult to change the direction. The model can lead to frustration if the stages of grief and individual needs are not taken into account (Kotter 1996)

The Change Curve Model is based on a model originally developed in the 1960s by Elisabeth Kübler-Ross to explain the grieving process (Kübler-Ross 2007). The Kübler-Ross Five Stage Model (Change Curve) is converted into the Change Curve in a change management context in the 1980s (Jaffe and Scott 2003). The model describes the stages of personal transition involved in most organizational changes. It supports to understand how people will react to change, provide assistance for their own personal transitions, and make sure they have the help and support they need. It predicts the effect on performance when the change is announced in the organisation: denial (avoidance, shock), anger (frustration, irritation), depression (overwhelmed, helplessness), bargaining (struggling to find meaning) and acceptance (exploring options, moving on) (Jaffe and Scott 2003). The individual emotion is very well captured, while the emotion of the group or organisation is missing. Furthermore, it might be difficult to evaluate the stage of change the individual is in and maybe the individual do not go through all steps e.g. in case of minor changes. Also, it might be difficult to apply to a group during the change process.

### **2.1.4 Theory of change**

In the 1970s, Zand and Sorensen were one of the first researches who mentioned the need to convert the abstract concept of Lewin's change model into operational measures (Zand and Sorensen 1975). The concrete Theory of Change has first

emerged in the United States in the 1990s (Stein and Valters 2013). Weiss (1995) described the Theory of Change as a theory of how and why an initiative works. Theory of Change is a specific type of methodology for planning, participation, and evaluation that is mainly used in the not-for-profit and government sectors to promote social change.

James (2011) stated Theory of Change is a theory about how and why a time-bound intervention in a prevailing situation or context is likely to work. Basic elements should be part of the Theory of Change (Collins and Clark 2013, p.1):

- *“The theory should clearly specify the long-term goal that a particular strategy is working towards – if the goal is vague then so too will any analysis of how and whether it will be achieved.*
- *Based on all available evidence, the preconditions hypothesized as necessary for the achievement of this long-term goal should be fully articulated in a causal pathway over time. This is crucial for a project, program or movement in analyzing and testing their core beliefs and understanding of the necessary conditions and preconditions for change.*
- *The various assumptions underpinning the theory should be explicit – or even incorporated into its causal analysis.”*

Mason and Barnes (2007) declared that Theories of Change has proved a popular approach of evaluations of complex social policy programmes and has proved of value to those implementing change processes in clarifying and reflecting on the strategies they are adopting. Theory of Change is developed in collaboration with stakeholders and modified throughout the intervention development and evaluation process through an ongoing process of reflection (De Silva *et al.* 2012). Theory of Change explains the process of change by outlining causal linkages in an initiative, i.e., its shorter-term, intermediate, and longer-term outcomes. The identified changes are mapped as the outcomes pathway, showing each outcome in logical relationship to all the others, as well as chronological flow (Vogel 2012).

Theory of Change, as a theory-driven approach is until today a tool which is mostly used in the implementation or evaluation of public health interventions (De Silva 2012).

For the development of the measurement tool, the study focuses on the individual reaction towards changes which will be the topic of the next section.

## **2.2 Resistance to change, readiness for change and the relevance of Person-Environment fit**

*“How will change affect me?”* is one of the first reactions to any change (Palmer, Dunford and Akin 2009, p.11). Every individual experiences change in a unique way. For some it implies a source of joy, benefits, or advantages for others it is a source of suffering, stress, and disadvantages (Bouckenooghe 2010).

Research on change readiness started with early studies on creating readiness by reducing resistance to change. Resistance to change and readiness for change are highly important topics in change management literature. Resistance is seen as the active or passive resistance toward change. For Armenakis, Harris and Mossholder (1993), readiness for change is often the crux of any change management strategy. According to the literature on readiness, the greatest challenge of change lies in the need to get the employees ready for change (Armenakis and Harris 2002). The importance of distinguishing between these two concepts resistance and creating readiness captured by the observation that simply reducing resistance does not guarantee active efforts on the part of the change recipients in support of the change (Stevens 2013).

### **2.2.1 Concept of resistance to change**

In the literature, the topic resistance to change is frequently brought up in the context of change, usually as a phenomenon that occurs in reaction to efforts to introduce changes in management practice, production methods, and technologies and when processes fail or fall short of expectations (Oreg 2006). Resistance to change is often cited as the main reason for difficulties in implementing changes (Erwin and Garman 2010). According to Maurer (1996, p.23), resistance to change is *“a force that slows or stops movement”*. Kotter (2007) defines resistance as an obstacle that prevents change in an organisation. If people do not want the change or they are not ready, they will resist (Prochaska *et al.* 1994).

Kurt Lewin introduced the term resistance to change in his field theory and later in his work on group dynamics (Lewin 1947). A further publication on the topic of resistance in organisations was written by Coch and French in *“Overcoming Resistance to Change”* in 1948 (Coch and French 1948, p.512). Coch and French (1948) stated that the resistance of employees is one of the most serious barriers for change efforts. Without mentioning the term resistance to change, they describe their idea as a

*“combination of an individual reaction of frustration with strong group-induced forces”* (Coch and French 1948, p.521).

Resistance is a form of conflict that is manifested in different ways (Ford, Ford and D’Amelio 2008). Coch and French (1948) described low efficiency, restriction on output and aggression against management as forms of resistance. Agocs (1997, p.918) defined resistance as a

*“process of refusal by decision makers to be influenced or affected by the views, concerns or evidence presented to them by those who advocate change in established practices, routines, goals or norms within the organisation”.*

The resistance contains a range of behaviours from passive to aggressive resistance (O’Connor 1993) and depends on the personality of the individual, on the nature of change itself, on attitudes toward it and on forces deriving from the group, organisation and environment (Judson 1991). Active resistance describes behaviour such as *“fault finding, ridiculing, appealing to fear, and manipulating”* (Hultman 1995, p.16). Judson (1991, p.48) added to this, the practices of *“doing as little, as possible, slowing down, committing errors, spoilage and deliberate sabotage”*. Passive resistance symptoms include behaviours like a lack of public support, failure to implement change, withholding information and procrastination (Hultman 1995). Resistance behaviours such as doing only what is demanded, non-learning and protests are further symptoms (Judson 1991). Altogether, resistance is commonly linked to negative employee attitudes or counter-productive behaviours.

The discussion about individual and organisational resistance is found in many contemporary textbooks. Self and Schraeder (2009) added specific factors to the dimension of change. Walinga (2009) noted the beginning of an effective organisational change at the individual level - implying that all types of changes depend on the commitment of the individuals. George and Jones (2001) emphasised this statement by arguing that change is triggered and implemented by the individual employees who are the backbone of the company. To understand and influence the change process on an organisational level, the individual level must be investigated. Furthermore, much of this research concludes that individual commitment to change is one of the most important components of successful change efforts (Judge *et al.* 1999). Individual response to change is linked to resistance to change (Lines 2005). According to Armenakis, Harris and Mossholder (1993), the organisation is responsible for developing the individual readiness for change. Foster (2010) has pointed out the lack of studies on understanding change at the individual level of analysis.



Individual resistance results from personal attributes such as *“disposition, current issues in an individual’s life and concerns related to the personal external environment”* (Self and Schraeder 2009, p.169). For Agocs (1997, p.917), individuals resist change because of *“habit and inertia, absence of skills they will need after the change, and fear of losing power”*. Dent and Goldberg (1999) argue that employees resist because of the potential loss of pay, comfort or status but not necessarily because of the change itself. According to Watson (1971), resistance on an organisational level is caused by systematic and culture coherence, vested interests, sacred values and mistrust of management. In particular, mistrust is an antecedent of resistance. Agocs (1997) contended that organisations also resist because of inertia, sunken costs, scarce resources, threats to the power base, values and beliefs. Armenakis and Harris (2002) added to this growing list, the topic of cynicism. If companies evidence poor scheduling when implementing changes, employees tend to develop cynicism. Stanley, Meyer and Topolnytsky (2005) observed that researchers see change-specific cynicism as an increasingly important issue for the development of resistance. Change specific factors might also create resistance to change (Self and Schraeder 2009). These kinds of factors are, for example, the process of implementing changes and the specific content encompassed within the change.

However, a variety of authors also stressed the advantage of resistance to change. According to Waddell and Sohal (1998), the concept of resistance to change is far more complex and can be turned into a helpful assistant in the change process. For example, Mabin, Forgeson and Green (2001) concurred, stating that resistance may have many advantages and might be sometimes useful and productive. For Piderit (2000), resistance helps to determine if a proposed change is useful. Waddell and Sohal (1998) considered change to be always a positive development and the ensuing resistance as supporting the disclosure of valid employee concerns. For Maurer (1996), resistance aids organisational stability because well-managed resistance creates an atmosphere of openness and trust. Waddell and Sohal (1998) confirmed this statement and value resistance as an adjusting factor between the externally driven need for change and the internal need for stability. Piderit (2000, p.784) noted that resistance delivers a chance for superior alternatives because

*“divergent opinions about direction are necessary in order for groups to make wise decisions and for organisations to change effectively”.*

For Waddell and Sohal (1998), employee resistance forces the effort to search for alternative ways and processes of change. Waddell and Sohal (1998) argued that resistance can generate energy and commitment. Employee’ discontent might

engender power which can be used to implement changes. Finally, Ford and Ford (2009) suggested that understanding resistance is a type of feedback that supports the change initiative. They have developed a five step-guideline on how to use resistance:

- (1) Boosting awareness even in the top management for the interests of the employees
- (2) Returning to purpose by clear communication
- (3) Changing the change by accepting suggestions from resistors
- (4) Building involvement and commitment by allaying worries and responding to ideas about changes
- (5) Closing the chapter on the past by deleting negative memories of failed changes (Ford and Ford 2009).

Researchers coined the term readiness for change at about the same time as they were questioning resistance to change (Jansen 2000). For many researchers, readiness for change is closely linked to resistance to change. Up until today, the majority of theoretical and empirical research focuses on the topic of readiness for change (Rafferty and Simons 2006).

### **2.2.2 Concept of readiness for change**

It seems as though concepts about readiness for change were present in researchers' minds before the term itself was coined. For example, organisational development theorists like Knickerbocker and McGregor (1941) underlined that changes which are made in technical processes have to be perceived as necessary by those whom the change affects. Jacobsen (1957) seemed to be the first who explicitly mentions the term readiness in a paper presented at a symposium on preventive and social psychiatry. He emphasised that there is an opposite pole to resistance to change in the form of readiness.

The description and definition of readiness for change is broad. For Huy (1999, p.328), it is the degree of *"willingness to consider change"*. Bernerth (2004, p.39) described readiness

*"as a state of mind during the change process that reflects the willingness or receptiveness to changing the way one thinks".*

Holt (2000) declared readiness as a necessary precondition for a person or organisation to succeed in changing. Beckhard and Harris (1987) agreed with this

statement and add further dimensions, such as motives and aims concerning changes that influence the readiness for change. Readiness for change has been defined as *“the cognitive precursor to the behaviours of either resistance to or support for change efforts”* (Armenakis, Harris and Mossholder 1993, p.268). Armenakis, Harris and Mossholder (1993) noted that readiness for change is similar to Lewin's (1951) concept of unfreezing. Lewin (1951) identified the unfreezing of an organisation as a key phase and a critical first move of an organisation towards change. This 'wakeup call' is necessary to 'open the shell of complacency and self-righteousness' in an organisation and to start the change process. The second phase, the moving phase is then the implementation of change (moving phase) where readiness for change plays an important role.. Bernerth (2004, p.40) stated that

*“readiness is more than understanding the change; readiness is more than believing in the change, readiness is a collection of thoughts and intentions towards the specific change effort”.*

For Schein (1999), the high failure rate of change programmes results from an unprofessional handling of the unfreezing process before starting a change process. Change experts confirmed that greater readiness for change leads to more successful change implementation (Weiner 2009). A high level of readiness for change indicates high motivation among employees to initiate change, thus exhibiting greater efforts in support of change and in opposing change problems (Meyer *et al.* 2007).

Change readiness should be incorporated at macro, meso and micro levels. On the macro level, readiness should be incorporated into the strategic plan. The creation of constant change readiness, organizations gain flexibility and adaptability and it helps to establish an environment of trust (Vakola 2013). At the meso level, high readiness facilitates change implementation. Responsible for change can create a feasible change plan addressing the organization's specific needs. Change interventions could put emphasis on creating and fostering favourable group norms through in-group identification (Vakola 2013). The readiness for change on the micro level can be identified and developed through employee training and development programmes (Vakola 2013).

Daley (1991), and Lehman, Greener and Simpson (2002) observed a link between personal aspects such as age and organisational change readiness. Other researchers emphasised the difference between organisational and individual readiness for change (Foster 2010). For example, Simon (1996) described readiness as an attribute of an organisation, whereas Armenakis, Harris and Mossholder (1993) and Cunningham *et al.* (2002) saw readiness linked to employee' mindset. Organisational readiness is a

multidimensional concept as organisations constantly find themselves in small- or large-scale changing processes (Eby *et al.* 2000).

The level of organisational readiness is a combination of the commitment to change by an organisation's members, as well as the efficacy of the change when implementing the organisational change (Weiner 2009). Individual readiness, as the individual state of readiness is critical for a successful change process. The individual employee's perception of change is one of the most important factors of change and a major source of resistance to change. These perceptions can facilitate or undermine the effectiveness of change interference (Armenakis, Harris and Mossholder 1993). People evaluate the change situation from different perspectives. Emotional involvement shows how one feels about the change, cognitive commitment demonstrates what one thinks about the change and intention to change displays how one supports the change (Eby *et al.* 2000; Bouckennooghe and Devos 2007).

Nevertheless, the perception of the organisation's readiness for change is not necessarily shared by individuals within the same work unit or organisation. According to Spreitzer's (1996) conceptualisations of empowerment perceptions, Eby *et al.* (2000, p.425) stated that readiness for organisational change reflects an *"individual's unique interpretive reality of the organisation"*. Spreitzer (1996) is convinced that people perceive the environment. Furthermore, he states that the influence of the individual perceptions is stronger than the objective reality. This leads to the conclusion of the organisation's readiness for change resulting from the individuals' perceptions.

Change readiness is the most prevalent positive attitude toward change that has been studied in the organizational change literature (Rafferty, Jimmieson and Armenakis 2013).

### **2.2.3 Measurement of resistance of change and readiness for change**

In order to develop a measurement model for readiness for change in the German public sector, the existing models will be presented and compared.

For Armenakis, Harris and Mossholder (1993), change agents play a major role in the change process. It is their duty to influence the beliefs and attitudes and to *"change individual cognition across a set of employees"* (Armenakis, Harris and Mossholder 1993, p.691). The members should perceive the change as both necessary and likely to be successful. Many models of organisational change propose critical components of change initiatives, such as building momentum and excitement and buying-in to the change effort. Kotter (2007) supported the hypothesis that in order to overcome the

organisational tendency towards stability, the creation of a sense of urgency and need for change is necessary. In order to create and increase the internal pressure for change, Kotter (2007) cited examples of organisations that have published bad customer satisfaction results. For Self and Schraeder (2009), the first step to implementing change is to create readiness for change.

### **Models to measure resistance to change and readiness for change focussing on the content process, context, and individual attributes**

Resistance can be grouped into two directions: Individual, dispositional resistance to change of an individual (Piderit 2000) and group resistance that is rooted in the individual resistance and leads to a collective resistance of the group (Ansoff and McDonnell 1990). Many approaches to resistance to change have focused on situational and group relevant antecedents of resistance to change (Coch and French 1948; Tichy 1983; Zander 1950). Studies in the 1990s begun to explore concepts that were related to resistance to change from an individual perspective. For example, self-discipline, an orientation toward creative achievement, and a lack of defensive rigidity were suggested to reflect people's adaptability to change on the basis of their contribution to the maintenance of high performance (Judge *et al.* 1999). Oreg (2003) adopted these concepts and focussed on the measurement of resistance for change on an individual level.

In order to measure readiness for change, a large group of researchers have focussed on the employees' perceptions of change (Holt *et al.* 2007c). At present, there are several diagnostic tools to measure change readiness.

Clark (2003) and Holt *et al.* (2007b) reviewed over 45 different measurement tools that were developed between 1950 and 2007 and documented in magazines, journals and publications. The researchers portend that none of the instruments examined presented a comprehensive model of change measurement (Clark 2003). Overall, the researchers synthesised four main research areas as essential in the discussion of readiness for change models that are content, process, context, and individual attributes.

The first field of research is the topic content to which several researches assign their change measurement tool to (Table 2.1). The content of change describes what is being changed, what is involved in the change and gives change agents an indication of how people feel about the change (Clark 2003). It is noticeable that most of the studies were done in an academic environment. Initially investigated by Hennigar

(1979), Loup (Ellett *et al.* 1997, p.275) adopted the “*receptivity to change inventory*” and modified it. Loup (Ellett *et al.* 1997) tried to assess the overall receptivity of school employees to particular changes. The result being that readiness exists when employees understand the reason for change and if that change has a cultural reason such as rebuilding structure and values. Velicer *et al.* (1985) suggested measuring change in terms of evaluating personal advantages and disadvantages. The study was made in the field of medicine. Bedell *et al.* (1985) emphasised the need for considering specific benefits and values.

**Table 2.1 Measurement of change readiness: Content-related tools**

Instrument focus	Influencing factors	Authors
<b>Content</b>	Relationship change acceptance, beliefs, needs and benefits	Bedell <i>et al.</i> (1985)
	Company culture	Loup by Ellett <i>et al.</i> (1997)
	Individual pros and cons	Velicer <i>et al.</i> (1985)

Source: In accordance with Clark (2003) and Holt *et al.* (2007b)

The second group of tools measures the process of change that mirrors the question of how the change takes place and how the leader implements change (Holt *et al.* 2007b). A variety of change management models and theories describe the activities that modify strategies, structures, and processes to increase effectiveness (Cummings and Worley 2009). Based on Lewin's change models, many change management authors compare and contrast these models and then attempt to complete them (Table 2.2). Choosing the suitable change model is the main task of the change manager.

**Table 2.2 Measurement of change readiness: Process-related tools**

Instrument focus	Influencing factors	Authors
<b>Process</b>	Unfreezing, movement, refreezing	Lewin (1951)
	Anticipation, confirmation, culmination, aftermath	Isabella (1990)
	Refusal, resistance, exploration, commitment	Jaffe, Scott and Tobe (1994)
	Analysing and planning, communication, gaining acceptance, making the initial transition, consolidation and follow-up	Judson (1991)
	Scouting, entry, diagnosis, planning, action, stabilisation, evaluation, termination	Lippitt, Watson and Westley (Cummings and Worley 2008)
	Sense of urgency, creating the guiding coalition, developing and communicating the vision, empowering broad-based action, generating short-term wins, consolidating gains, anchoring new approaches	Kotter (2007)
	Style of change (collaborative, consultative, directive, and coercive) combined with the scale of change (fine-tuning, incremental change, modular transformation)	Dunphy and Stace (1993)

The third option to measure the readiness for change is the measurement of the internal change context (Table 2.3). This refers to the question of where the change occurs in the organisation. According to the employees' perceptions it measures the readiness for change influenced by the climate, task and relationship in the organisation.

**Table 2.3 Measurement of change readiness: Context-related tools**

Instrument focus	Influencing factors	Authors
<b>Context</b>	Exchange of information	Deevy (1991)
	Exchange of information	Jones and Bearly (1996)
	Way of decision making	Hay and McBer Company (1993)
	Climate of change	Bouckennooghe, Devos, and Van den Broeck (2009)

Source: In accordance with Clark (2003) and Holt *et al.* (2007b)

The fourth component is the individual attitude towards change. Influencing variables for readiness for change are manifold. In literature, researchers focus on employee readiness predictors like the change role for change agents. Process, participation, belief, environment, fairness and commitment have also been found to be related to employees' readiness (Shah 2011). Research on employees' readiness for organisational change identifies the interactive effect of justice, cynicism and change commitment (Bernerth *et al.* 2007). Further studies on organisational change stress layoffs, turnover, cynicism and resistance (Shah 2011). Relevant factors are leadership (Kavanagh and Ashkanasy 2006), open communication (Armenakis and Harris 2002), supportive management practice (De Jonge *et al.* 2001) and involvement of the employees (Dunphy 2003).

Researchers in the field of readiness for change have investigated diverse categories of variables influencing the readiness for change. Summarised into four main topics, the categories can be described as demographic, job-related, organisation-related and individual-related (Table 2.4).

Age, gender and number of children also have an impact on the readiness for change level in the category of demography (Madsen, Miller and John 2005). For example, Madsen, Miller and John (2005) conducted a study in this field surveying the employees of four organisations which varied in product, service and industry and

outlined the relation of demographic variables such as age and gender with the readiness for change level.

The job-related category includes all job-related factors that contribute to readiness for change. Some of these factors were determined to be decision latitude (Rafferty and Simons 2006; Bouckennooghe and Devos 2007; Cunningham *et al.* 2002), job satisfaction (McNabb and Sepic 1995), job performance (McNabb and Sepic 1995; Weeks *et al.* 2004), job knowledge and skills (Hanpachern, Morgan and Griego 1998), and job demands and position with challenging jobs (Hanpachern, Morgan and Griego 1998; Cunningham *et al.* 2002). In a study conducted in a large manufacturing company, Hanpachern, Morgan and Griego (1998) explored the positive impact of the length of employment to readiness for change. They found that employees who are relatively new to the organisation adapt more easily to change (Hanpachern, Morgan and Griego 1998). Eby *et al.* (2000) conducted a study in two divisions of a sales organisation that introduced a team-based structure. It shows that a preference for working in teams increases change readiness.

The third category comprises factors concerning the organisation. It focused on employees' feelings, attitudes and perceptions towards readiness for change, that are influenced by the organisation. Madsen, Miller and John (2005) emphasised the impact of organisational commitment on readiness for change. Salient factors in this regard were trust in management (Weber and Weber 2001; Bouckennooghe and Devos 2007) combined with management leadership relations (Hanpachern, Morgan and Griego 1998; Rafferty and Simons 2006) and relationship with managers (Miller, Johnson and Grau 1994). Rafferty and Simons (2006) conducted a study with the help of employees from five public sector companies and found that there was a connection between perceived organisational support, logistics and systems support and the readiness for change level. Social relations in the workplace influence the organisational culture and the employees' readiness for change. An atmosphere of flexible policies and procedures has a positive impact on working conditions (Eby *et al.* 2000; Rafferty and Simons 2006). Finally, change communication and change history play a significant role in the level of readiness for change (Bouckennooghe and Devos 2007).

The last category, called 'individual-related' factors, describes the impact of the individual-related factors on the readiness for change (Table 2.4). Researchers such as Hanpachern, Morgan and Griego (1998) and Judge *et al.* (1999) reported a direct relationship between self-efficacy and readiness for change. Self-efficacy is described by Madsen, Miller and John (2005, p.215) as "*confidence in individual ability to make the change succeed*". Cunningham *et al.* (2002) and Rafferty and Simons (2006)



explore the impact of self-esteem on readiness. Self-esteem is defined as the “*extent to which an individual believes himself to be capable, significant, successful, and worthy*” (Judge *et al.* 1999, p.109).

**Table 2.4 Measurement of change readiness: Individual-related tools**

Instrument focus	Influencing factors	Authors
<b>Individual Demographic</b>	Gender, age, number of children	Madsen, Miller and John (2005)
<b>Individual Job-related</b>	Decision latitude	Rafferty and Simons (2006); Bouckennooghe and Devos (2007); Cunningham <i>et al.</i> (2002)
	Job satisfaction	McNabb and Sepic (1995)
	Job performance	McNabb and Sepic (1995); Weeks <i>et al.</i> (2004)
	Job knowledge and skills	Hanpachern, Morgan and Griego (1998)
	Job demands, position with challenging jobs	Hanpachern, Morgan and Griego (1998); Cunningham <i>et al.</i> (2002)
	Length of employment	Hanpachern, Morgan and Griego (1998)
	Working in teams	Eby <i>et al.</i> (2000)
<b>Organisation-related</b>	Organisational commitment	Madsen, Miller and John (2005)
	Trust in management	Weber and Weber (2001); Bouckennooghe and Devos (2007)
	Management leadership relation	Hanpachern, Morgan and Griego (1998); Rafferty and Simons (2006)
	Relationship with manager	Miller, Madsen and John (2006)
	Perceived organisational support	Rafferty and Simons (2006)
	Logistics and systems supports	Rafferty and Simons (2006)
	Social relations in workplace organisational culture	Hanpachern, Morgan and Griego (1998), Madsen, Miller and John (2005)
	Perceptions of supervisory support for improvement	Weber and Weber (2001)
	Flexible policies and procedures	Eby <i>et al.</i> (2000); Rafferty and Simons (2006)
	Change communication	Bouckennooghe and Devos (2007)
<b>Individual-related</b>	Self-efficacy	Hanpachern, Morgan and Griego (1998); Judge <i>et al.</i> (1999); Cunningham <i>et al.</i> (2002); Rafferty and Simons (2006)
	Self-esteem	Judge <i>et al.</i> (1999)
	Trust in peer	Eby <i>et al.</i> (2000), Rafferty and Simons (2006)
	Locus of control	Judge <i>et al.</i> (1999)

Trust in peers (Eby *et al.* 2000; Rafferty and Simons 2006) refers to the trust of the individual employee in the working group and the peers and is related to the readiness

for change (Eby *et al.* 2000). Locus of control is defined as “*the perception of the individual to exercise control over the environment and the personal successes*” (Judge *et al.* 1999). In contrast to self-efficacy, the term locus of control connotes whether the consequences of individual efforts are within the person’s control (Judge *et al.* 1999).

In general, Palmer, Dunford and Akin (2009) point out the lack of empirical evidence concerning the successful use of change models.

### **Further models to measure readiness for change**

Beside the above mentioned tool, there are also other instruments to measure readiness for change. For instance, it was the aim of Cinite, Duxburg and Higgins (2009) to create a tool especially for the public sector. Relevant factors here are the commitment of senior management to change, competence of change agents, support of immediate managers, communication of change and impact of the change on work (Cinite, Duxburg and Higgins 2009).

Several factors such as organisational norms, values and relationships influence the perceptions of those in organisations (Clark 2003). Eby *et al.* (2000) believed that organisations in general should display an openness to change. Without focussing on change initiatives, Eby *et al.* (2000) identified employee’ perception as a key driver for readiness. Bouckennooghe, Devos and Van den Broeck (2009) have created the Organisational Change Questionnaire - Climate of Change, Process, and Readiness (OCQ-C, P, R) scale through a self-report battery, which can be used to measure the internal climate of change, the process of factors of change and readiness for change.

The readiness for change concept as a multidimensional concept embraces the measurement in “*an emotional dimension, a cognitive dimension and an intentional dimension*” (Bouckennooghe, Devos and Van den Broeck 2009, p.561). Emotional readiness for change describes the feeling about a specific change project. Cognitive readiness comprises the belief of the employees towards the outcome of the change. Finally, intentional readiness measures the efforts and the energy employees show towards the change (Bouckennooghe, Devos and Van den Broeck 2009).

For Clark (2003), an important part of the perception measurement is the relationship, because it signifies the interaction between the organisations with its members.

Finally, Deevy (1991) and Jones and Bearley (1996) focussed on the relation of how information is exchanged and how the exchange influence the individual level of readiness.

#### **2.2.4 Influence of Person-Environment fit**

All in all, individual readiness for change is influenced by many variables and depends on an individual's motivation and commitment to change (Devos and Bouckenooghe 2006). The readiness for change level reflects to a large extent an individual's perception of change. Even individuals within the same work unit do not necessarily share the same level of readiness for change (Eby *et al.* 2000). Eby *et al.* (2000) have calculated that the perceived participation at work influences the perceptions of readiness for change. Positively-related readiness for change variables of individuals are factors such as trust among employees, participation in decision processes, team orientation, flexible organisation policies and procedures, and individual support from the organisation. All these factors are also linked to the individual fit concept.

Researchers, managers and specialists are more and more interested in studies on how to work with and manage people from different generations, backgrounds, work experience and values. Changes in work and the time when people are introduced to work, lead to different mindsets and attitudes towards working (Cennamo and Gardner 2008). The hypothesis concerning P-E fit is based on the differences between people, regarding their goals, expectations and work values (Cennamo and Gardner 2008).

Work values can be distinguished as either extrinsic or intrinsic. Examples of extrinsic values are salary and job security. Intrinsic values reflect factors such as whether the work is interesting, pleasing, and challenging (Van Schuur 2011). Further research has added to these list altruistic values such as making a contribution to society (Borg 1990); status-related values such as influence and recognition (Ros, Schwartz and Surkiss 1999); and social-related values such as a good working relationship with supervisors. In a working environment, both individuals and organisations have a set of values and communicate them (Cennamo and Gardner 2008). The 'fit' of individuals and organisations is the subject of research on the concept of fit. Kristof (1996) explains 'fit' as the *"compatibility between people and the organisations which they work in"*.

The theory of fit is founded on the integrationist theory of behaviour (Sekiguchi 2004). The integrationist theory has a long tradition in social sciences and can be traced back to Lewin (1951). The P-E fit is the umbrella of the fit concept (Lauver and Kristof-Brown 2001) and is defined as

*“a comprehensive notion that necessarily includes one’s compatibility with multiple systems in the work environment”* (Kristof-Brown, Zimmermann and Johnson 2005, p.985).

The P-E fit theory proposes that positive responses occur when individuals fit into the environment. Research has shown that individuals who are satisfied with their job correspond to the career-relevant personality types (Carless 2005). The concept of P-E fit is described by Schneider (2001, p.142) as *“so pervasive as to be one of it, if not the dominant conceptual force in the field”*.

Because of the broad definition, different fit-types have been derived from the P-E fit: Person-Organisation fit (P-O fit), Person-Vocation fit (P-V fit), Person-Job fit (P-J fit), Person-Group fit (P-G fit) and Person-Supervisor fit (P-S fit) (Lauver and Kristof-Brown 2001). The definitions, interaction, relevance and delimitation between these types of fit are the topics of the following section.

### **2.2.4.1 Person-Organisation fit as a key concept**

The P-O correspondence is also generically discussed in organisational behaviour theory as an influential element in the search for successful strategies and policies for the company, agency or bureaucracy (Vigoda-Gabot and Meiri 2008). Kristof-Brown, Zimmermann and Johnson (2005) and Kristof (1996) present a comprehensive definition of P-O fit. They show that P-O fit is one part of the more general-environment fit. This fit is highly important for a better understanding of the culture, atmosphere and performance of the organisation (Vigoda-Gabot and Meiri 2008).

P-O fit can be differentiated in several ways such as supplementary and complementary fit. Supplementary fit is when a person supplements or possesses characteristics that fit to others in an environment. Complementary fit describes the situation when a person adds something with his or her characteristics which is otherwise missing in the organisation (Muchinsky and Monahan 1987). A second differentiation is between needs-supplies and demands-abilities. Researchers speak about need-supplies when an organisation satisfies individuals’ needs. The demands-abilities perspective describes the situation in which an individual is able to meet the organisational demands (Edwards 1991). The P-O fit is closely related to the P-V fit but has to do more specifically with the relation between an individual and the job characteristics (Edwards 1991).

According to Bretz and Judge (1994) and other researchers, P-O fit is the degree to which individuals (skills, needs, values and personality) match the organisation’s

requirements. P-O fit mirrors the level of compatibility of an employee and his/her workplace and it shows a level of fulfilled expectations in the work environment (Vigoda-Gabot and Meiri 2008).

A high correspondence of individual and organisational compatibility is a desirable situation (Ng and Burke 2005). According to Noblet *et al.* (2005), a strong fit displays common views concerning the organisation's goals, strategies and values toward new ideas and moreover, a stronger identification with the tasks, principles and standards of work in the organisational environment. Further research emphasises the correspondence of classic work values like employees' autonomy, rewards, benefits, competitiveness, team work, loyalty and fairness, promotion procedures and helpful behaviour (Noblet *et al.* 2005). The analysis made by Kristof-Brown, Zimmermann and Johnson (2005) shows a strong correlation between job satisfaction and organisational commitment, as well as job acceptance intentions and hiring recommendations, and a moderate correlation with the intention to quit. Hoffmann and Woehr (2006) state that a meta-review of studies examining the relationship between P-O fit and behavioural criteria (job performance, organisational citizenship behaviours, and turnover) reveals a weak to moderate relation to each other. A lack of fit may reduce employees' performance and might influence the outcomes of the overall organisational machinery. A low P-O fit shows a higher degree of employees' frustration and disappointment, and individuals might feel separated from the organisation (Noblet *et al.* 2005). An emotional, psychological and functional gap between the organisation and its employees arises. Commitment towards the organisation, as well as job satisfaction and service orientation might decline. These employees might not fit the organisations and might perceive the organisation more negatively (Noblet *et al.* 2005).

### **2.2.4.2 Additional concepts out of the Person-Environment fit concept**

A variety of person-fit concepts influences the relationship between employees and the organisation they work for or the job they carry out. Beside the P-O fit described above, there are several other fit concepts. For example, the Person-Vocation fit (P-V fit) is described by Holland (1997) as the broadest level of the work environment with which a person can fit - the people choose a job which is a good match with their concept of self. According to Kristof-Brown, Zimmermann and Johnson (2005), the P-V fit includes vocational choice theories that propose matching people with careers that meet their interests and the theory of work adjustments. This fit concept predicts vocational choice, but it does not support the validity of a forecast concerning a particular

organisation. This field of research has been reviewed by a vast number of researchers (Kristof-Brown, Zimmermann and Johnson 2005).

A type of the P-E fit that has been thoroughly studied is the Person-Job fit (P-J fit) (Kristof-Brown, Zimmermann and Johnson 2005). The P-J fit refers to the compatibility of individuals to specific jobs. It describes the

*“match between the abilities of a person such as knowledge, skills, abilities and the demands of a job or the needs/desires of a person and what is provided by the job”* (Lauver and Kristof-Brown 2001, p.455).

The P-J fit is relevant to an individual's compatibility with a specific job and not the organisation itself (Lauver and Kristof-Brown 2001). However, many job requirements are consistent with the needs of the organisation and are therefore, distinct elements of the work environment (Kristof 1996). Previous studies of P-J fit have focused on the level of skills and abilities that employees can bring to their jobs to meet job requirements, i.e. demands-supply fit (Kristof 1996). The P-J fit can also refer to environmental benefits of the job for the employee (i.e. needs-supplies fit). Much of the previous research assessing P-J fit considers only how job candidates' skills and abilities or individual characteristics fit with job demands, instead of focusing on how individual needs can be satisfied by their job i.e., employees' need fulfillment (Cable and DeRue 2002). Research shows a non-significant correlation between P-O and P-J fit that leads to the assumption that individuals witness a different degree of fit at the job level and the organisational level (Kristof 1996).

Another field of research is the Person-Group fit (P-G fit). Although the P-G fit is not relevant for the further context of this study, it does become of high relevance to the person-fit discussion in general (Kristof 1996). It represents the compatibility of individuals to their work groups (Kristof-Brown, Zimmermann and Johnson 2005). This field of research has been largely neglected. Most research shows that the psychological compatibility between co-workers influences individual outcomes in group settings.

The final field of research, which is a non-exhaustive list of possible concepts concerning fit, is the Person-Supervisor fit (P-S fit). The P-S fit describes the relationship between applicants and recruiters or employees and managers in the work environment. It is the fit between. The most research on this concept has been conducted on the relationship between subordinates and supervisors (e.g. Kristof-Brown, Zimmermann and Johnson 2005).

## **2.3 Public sector and the reform wave New Public Management**

The high failure rate of changes in the public sector is the focus of this section and the topic of the public sector will be outlined. This section embraces the facets of the public sector including the concept, the development, the structure and the duty of the public sector combined with special emphasis on Germany and the German privatisation case of DB AG.

This section seeks to link the achievement of higher performance, the intention of delivering a better service and the improvement of public welfare in the public sector which can be embraced under the major reform wave called New Public Management (NPM). First of all, it is helpful to have a closer look at the developments in management and organisational behaviour.

### **2.3.1 Concept of the public sector**

The definition of the term public sector varies, however three main definitions can be found deriving from legal, financial and organisational perspectives (Maroto and Rubalcaba 2005). The legal definition, as described by Maroto and Rubalcaba (2005) states that the public sector consists of government organisations and organisations governed by public law. From a financial point of view (financial definition), the public sector includes government organisations and private organisations that are largely funded by public means, including non-profit organisations providing education and health care (Maroto and Rubalcaba 2005). In the functional definition, the public sector includes all organisations in the field of public administration, social security, law and order, education, health care, and social and cultural services.

The public sector is part of the economy. It provides basic government services, also called public services, to the citizens. The components of the public sector vary from country to country. A number of tasks including such services as the police, military, public roads, public transport, basic education and healthcare cannot be left to the market because these services must be accessible to all (Farnham and Horton 1996). Furthermore, non-payers cannot be excluded from the use of these services e.g. street lighting that is available to all in public sphere. All of society, rather than just the individual who uses the service, benefits from services that ensure equal opportunity like public education (Farnham and Horton 1996).

The public sector operates on many levels. Federal Government controls defence and foreign policy, while local or provincial governments organise health and education,

and waste collection and street lighting are dealt with at an even lower level (Maroto and Rubalcaba 2005). It is the most powerful single institution in a society and has a monopoly over certain types of activity such as law-making, maintaining an army and waging war with other countries (Maroto and Rubalcaba 2005). Because of this powerful role, the public sector is an active regulator of the market by fixing the minimum wage, the electrical tariffs or food quality regulations. It is an economic agent by being active in financial markets or undertaking enterprising activities in competition with the private sector in areas like transport, health, mining or the financial system. And as a distributor, it cares for the pensions and transfer payments like unemployment benefits. The public sector means employment stability and is a loyal employer (Rondeaux 2006).

Public service employees are called public servants, which includes civil servants with 1.9m, public servants and public workers with 2.7m employees (Statistisches Bundesamt 2010). The public sector in Germany includes all employed individuals at the Federal Government, Federal State and local authority level. The Federal Government, with its 15 ministries, approximately 300 governmental organisations and five Federal Courts of Justice is responsible for the military, labour administration, Foreign Service, railway, mail, etc.. The Federal State level consists of 16 states which have their own constitutions and democratically elected parliaments. They are responsible for cultural affairs, the police, the judiciary and the prison system (Derlien 2003). Local government is divided into 116 cities and 329 counties with 14,500 communities and mainly take care of local and municipal functions. Their structure reflects the German Constitution as a Federal State with a different level of policy rights defined in the Basic Law.

According to Mullins (2009), organisations are social units that are created by groups in a society to achieve specific purposes and objectives through planned and coordinated activities. Organisations are structures of people and exist in all sizes, shapes and types. They are a highly relevant part of society and involve both the public and private sectors (Mullins 2009).

Public sector organisations are organisations that are created by the government, have a political purpose and carry out public services. This means that politicians define the goals of public sector organisations. Factors of success are not measured by profit or loss, and public sector organisations are not profit-oriented and do not rely on the market so they cannot go bankrupt (Farnham and Horton 1996). Any surplus earned by the public sector organisations is reinvested through reduced charges or improvement of services (Mullins 2009). Public sector organisations cover a wide range of activities



including municipal undertakings financed through taxes and payments as well as central government departments which are financed by funds. Pollitt (1990, p.121) states that public sector organisations tend to be complex and often internally conflicting because they entail

*“the need to build and maintain coalitions of support, the set of broadly-based objectives and vague words which provide endless opportunities for defence and evasion in the process of political debate”.*

Public sector organisations have to satisfy many different, sometimes conflicting interests as well. For instance, a government may agree to lower taxes but at the same time, the expenditure for education should be increased. According to Farnham and Horton (1996), the products of the public service organisations are closely scrutinised by the public for a number of reasons. For example, public organisations are often monopolists in their sector, and public bodies can exercise power to ensure compliance with public law. Furthermore, public organisations deliver public goods, which can have a massive influence on people, and regulate many fields of private life e.g. from driving or drinking. Public bodies are financed by taxation (Farnham and Horton 1996).

The private sector is also part of the economy, but is not controlled by the state and is founded, operated and owned by private enterprises. The private sector includes the personal sector (households) and corporate sector (firms), and is responsible for allocating most of the resources within an economy (Farnham and Horton 1996). In contrast, private enterprise organisations are owned and financed by individuals, partners or shareholders. The size and nature of the organisations and the goods and services produced vary widely. Private enterprises are market driven and their main goal is to make a profit through meeting customers' demands and by generating a surplus of revenues over costs (Mullins 2009). The profit will then be paid out to the shareholder or reinvested in the company. Further goals, like organisational growth, brand leadership and market reputation are vehicles to survive in the market. Private organisations must be profitable and economically sufficient to stay competitive and to survive (Farnham and Horton 1996). Like public organisations, private enterprises have different duties and obligations towards shareholders, employees, suppliers, customers and community.

However, Rainey (2009) stresses the need for the distinction between the public and private sector arguing that public interests differ from private interests, public officials are oriented towards democratic values and the constitution requires equal treatment of persons.

### **2.3.1.1 Structure of the public sector**

Countries like Germany and France are characterised by a long judicial state tradition (Kickert 2008). Germany, for example, can be seen as a state-centred society described by an 'etatism' combined with the idea of the constitutional state, a welfare orientation and federalism (Benz and Goetz 1996, p.15).

Tracing back to the German unification in 1870, the idea of a constitutional state is a policy in which the law is the theoretical sovereign combined with an idea of upholding human rights (Bhat 2007).

*"We find that the Basic Law of the Federal Republic opens with a long catalogue of human rights, setting out what might be described as the ethical content of the Rechtsstaat"* (Benz and Goetz 1996, p.15).

The establishment of the constitutional state was a turning point for many European countries and it established legislation as a foundation of the states. From then on, constitution, laws and regulations have formed the basis of the administrative activities (Kickert 2008).

Nowadays, the constitutional state is defined as a state that acts as a central integrating power of society through enforcing the law (Pollitt and Bouckaert 2004). Furthermore, the constitutional state includes a special court for the independent review of administrative decisions and a constitutional court that dispenses justice concerning basic constitutional rights (Derlien 2008). The introduction of the constitutional state was also the starting point of modern professional bureaucracy (Kickert 2008).

### **2.3.1.2 Impact of bureaucracy on the public sector**

Bureaucracy is a typical organisational structure that is often found in large-scale organisations and in the public sector (Green 1997). The most modern, rational and efficient structures, procedures and management in the private and public management are based on bureaucratic models formulated by the German sociologist, Max Weber at the beginning of 20<sup>th</sup> century (Reichard 2001). Most modern European states adopted this system in the half-century before the First World War (WW I) or during the inter-war era (Eliassen and Sitter 2008).

Max Weber analysed the organisational power structure and his conclusions are known as Weberian ideas of bureaucracy or Weberian Bureaucracy (Mullins 2009). He argued

that bureaucracy constitutes the most efficient and rational way in which human activity can be organised and it is indispensable to the modern world (Swedberg and Agevall 2005). Weber described in this masterpiece many ideal types of public management and governance and stated that “*Bureaucratic administration means fundamentally domination through knowledge*” (Weber and Roth 2007, p.225).

In his eyes, bureaucracy is a result of the growth and complexity of organisations and serves the need for a functional, effective system to run the company. Weber listed the following as preconditions for the emergence of bureaucracy: the growth in size and density of the population being administered, the growth in complexity of the administrative tasks being carried out, and the existence of a monetary economy requiring a more efficient administrative system (Mullins 2009). As a result of the development of communication and transportation technologies, a more efficient administration became not only possible but demanded by the public. Accompanying this shift was an increasing democratization and rationalization of culture. This resulted in public demands for a new administrative system (Mullins 2009).

Weber emphasised the “*importance of administration based on expertise*” and the “*administration based on discipline*” (Mullins 2009, p.47). Weber's ideal bureaucracy is characterized by hierarchical organisation, delineated lines of authority with fixed areas of activity, action taken on the basis of, and recorded in, written rules bureaucratic officials with expert training rules implemented by neutral officials and career advancement depending on technical qualifications judged by organisation, not individuals (Swedberg and Agevall 2005).

Weber believed rationality and efficiency can be attained through bureaucracy, he was mindful of its shortcomings as evidenced by the fact that he also associated it with “*an oppressive routine adverse to personal freedom*” (Fry 1998, p.33). He realizes that bureaucracy limits individual freedom and makes it difficult if not impossible for individuals to understand their activities in relation to the organization as a whole. Researchers prolonged these critics such as Merton (1940). He criticizes Weber's bureaucracy by observing that the bureaucratic features, which Weber believes in enhancing rationality and efficiency, might actually be associated with irrationality and inefficiency. The model of Weber focuses on limitations that bureaucracy has in terms of its ideal type, its negligence of informal organization, its dehumanisation and its tense relationship with democracy. Weber's bureaucracy does not consider the important role of the relationships that exist in any organisations (Merton 1940).

Mullins (2009) has distinguished four descriptions of bureaucracy. One of these is the specialisation that guarantees continuity because it applies to the job and not to the

person doing the job. The clear distinction between worker and management for example, in the armed forces and in civil service, can be explained by the hierarchy of authority. The system of rules is another major point and forms the basis for doing the job. The knowledge of the rules is the foundation for having a job in this area. Finally, the split of privileges is a written system of rules and can be seen as impersonal. Bureaucratic organisations are characterised by features such as hierarchical structures, obedience to commands, formalisation, discipline and a professional ethos. Bureaucracy is often represented by standardised procedure (rule-following) that guides the execution of most or all processes within the body. It is a formal division of powers, hierarchy, and relationships intended to anticipate needs and improve efficiency (Mullins 2009).

These characteristic attributes are relevant even today in public sector organisations such as universities and local authorities (Reichard 2001). Public organisations ask for a *“uniformity of treatment, a regularity of procedures and accountability for operation”* which limits the room to manoeuvre (Mullins 2009, p.50). The variety of criticism about bureaucracy is vast. One critical point is for example, the inefficient allocation of resources. Agents cannot calculate the exact price of the services and products because of the absence of market prices (Carnis 2010). According to Carnis (2010), this might lead to an inefficient use of resources. The destabilisation of markets is another issue as the interference with a wrong calculation of resources can expose the market forces without consequences to the bureaucratic organisations as a part of the public sector (Carnis 2010). Mullins (2009) finds that the bureaucratic system is often inefficient as it focuses on rules and procedures making record keeping and paperwork more important than the aim of solving the problem. Furthermore, Mullins (2009) criticises the inflexibility of bureaucracy stating that in cases when rules and processes are missing in a particular situation, agents might not show any willingness to solve the problem. Agents exhibit a dependence on bureaucratic status, symbols, rules and processes and hence, lack flexibility towards changes. Finally, Mullins (2009) posits that standardised processes might lead to a lack of responsiveness and stereotypical behaviour resulting from the impersonal relationship to problems.

Recently, this topic has become a policy priority for improving efficiency in public organisations (Keyworth 2006). Bureaucracy played an important role in the German unification process because administrative policy worked as a blueprint to establish administrative structures in Eastern Germany. With the exception of the privatisation agency and the agency for the protection of the State Security in the German

Democratic Republic (GDR), the central government of Western Germany was completely adopted by Eastern Germany (Derlien 2003).

New information systems and technologies revolutionise processes in the way government services are delivered and in effecting the amount of administrative work. Currently, the trend is heading towards new organisational forms with more self-regulation. However, bureaucracy is still as relevant in public sector organisations as it was in the past (Mullins 2009).

### **2.3.2 Reforms in the German public sector**

After the Second World War (WW II), Germany increased its state activities in the direction of becoming a welfare state. The commitment to the welfare state is a pillar of the German Republic (Wollmann and Schröter 2000). Aside from pursuing economic growth, welfare states follow further aims such as the prevention of poverty, the insurance of social risks like unemployment, old age and sickness and the support of costs for education and raising children. To achieve these aims, governments introduce diverse instruments such as the social insurance institution, financed by taxes, and the prevention policy in the form of public infrastructure (Hauser 2004).

Motivation for public sector reforms stems from a variety of reasons such as popular pressure, fiscal crisis, and financial support (Paul 2010). It is the task of public sector reforms to serve the economy better, to improve international economic competitiveness, to prevent national decline, and to reduce fiscal stress in terms of budget deficits and public debt (Olsen 1997).

Minor reforms in the area of public service appeared continuously in the western region of Germany and were realised step by step in a self-generated way, which can be called the intelligence of bureaucracy. This careful handling of reforms can be traced back to the Prussian reforms laid out by Stein and Hardenberg in year 1806 to 1812 (Derlien 2003). Nowadays, the Ministry of the Interior is responsible for reforms in the field of general administrative matters or civil servants (Derlien 2003).

Since WW II, few endeavours have been made to introduce further bureaucratic reforms. Reforms that were introduced during the 1960s and 1970s have largely remained on paper (Reichard 2001). The reforms included for example, new procedures to improve the instruments of planning and decision-making (cost-benefit-analysis) and new management concepts such as management by objectives and delegation adapted from the private sector (Harzbürger model). Furthermore, the reform should lead to show public responsiveness through reorganisation (e.g. towns

introduced 'one stop offices' for the inhabitants). The increase of services performed by civil servants with the help of new personnel management instruments (instruments of staff recruiting) was another important part of the reform wave.

This employment of civil and public servants in the German public service, as well as the classification of educational personnel as civil servants, is not undisputed. In 1973, an unsuccessful attempt was made to create a uniform public service by extending public law status to all groups, by changing the constitution, abandoning the special status of the civil service and by introducing modern incentive systems (Reichard 2008). However, the two-third majority necessary for a constitutional amendment was not reached, thus the difference continued. Today, critics' main worries are the pension load being transferred onto future budgets and try to limit civil service status to core public task areas (Flynn 2007).

A major reform peak occurred between 1974 and 1975 which was characterised by a territorial reform, functional government reform and a public service reform without a common reform philosophy (Derlien 2003). A strong trend towards the decentralisation of public administration including the expansion of local government was visible (Halvorsen *et al.* 2005). The wave was triggered by the increase in unemployment caused by the first oil crisis (Derlien 2003).

According to Benz (1995, p.4), the necessity for large reforms existed but

*"limited innovation capacities made it unlikely that the reforms would be attempted and even more improbable that they could be successful".*

Reasons for this are the inter-departmental and inter-governmental dispersion of relevant political, legal and financial powers, responsibilities and resources and the difficulties of achieving cross-party consensus in a coalition government with strong representation from national opposition parties (Benz 1995). Until the end of the 1980s, structural deficits were papered over by economic growth and the increasing budget (Reichard 2001).

From 1978 to 1989, a phase of de-bureaucratisation and citizen orientation was not successful and the major characteristics of bureaucratic administration survived (Reichard 2008).

This phase was followed by an unpredictable reform wave in the course of the reunification of Germany in 1990. Under time pressure and without solid reflection, the transfer of the Western bureaucratic model to the East took place (Derlien 2003). After a few of years, the restructuring of the former Eastern German Federal States was completed and the introduction of the West German Weberian model system was

successful. The transformation took place without the introduction of new reform ideas (Reichard 2008).

### **2.3.2.1 Reform wave New Public Management**

In the search for an affordable public sector, a variety of thorough constructs and theories have been developed. The idea of NPM has gained more and more ground over the years and is nowadays one of the most important and complex reform approaches in the public sector. This subsection describes the history of NPM and examines the pros and cons of the global NPM movement.

The classic public management paradigm, influenced by the Weberian ideas of bureaucracy, lasted more or less until the end of the 1970s (Pollitt and Bouckaert 2004). After the oil crisis in 1973 and the following financial crisis that affected the Organisation for Economic Co-operation and Development (OECD) countries, the socio-economic, financial and political contexts of public sector modernisation were fundamentally changed (Wollmann 2000).

Governments all over the world started experimenting in areas such as performance-related budgeting, accruals accounting, privatisation, contracting out and public-private partnership (Homburg, Pollitt and Van Thiel 2007). This movement has been termed NPM and was originally stimulated by neo-conservative governments in the UK (at the end of the 1970s) and in the USA (since 1980) (Derlien and Peters 2008). The idea entails breaking with established bureaucratic ideology that has been the foundation of modern western states (O'Flynn 2007) and to redraw the boundaries of the state's power (Derlien and Peters 2008).

Since the 1980s, NPM reform has been sweeping across the globe and has been changing bureaucratic systems (Horton 2006). NPM can be seen as a further development of the original public administration concept (Homburg, Pollitt and Van Thiel 2007). NPM is not a coherent reform programme but an umbrella term for a certain type of reforms (Eliassen and Sitter 2008). This is the reason why NPM can be seen as a collection of reforms and ideas (Halvorsen *et al.* 2005). It is the aim of the reform(s) to change the structures and processes of public service organisations so that they will run better (Pollitt and Bouckaert 2004). The concept of NPM is connected with the megatrends in the administrative field (Hood 1991). Slowing down government growth with regard to public spending through privatisation is a central goal in this field. Newly introduced information technology has also had an influence on processes in the public service sector. Lastly, NPM is pioneering with its international orientation in

terms of policy design, decision style, and inter-governmental cooperation. Yet, there is no common definition of NPM (Speier-Werner 2006). Reichard (2001) lists the core elements of NPM as:

- Hands-on professional management - let managers manage
- Explicit standards and measures of performance - introduction of goals, success factors expressed in quantitative terms
- Emphasis on output - controlling through measured performance and stress on results instead of procedures
- Move to disaggregate units - with the help of privatisation and creation of decentralised units
- Shift to greater competition - use of contracts and public tendering
- Stress on private sector style - orientation on private sector with greater flexibility in hiring and rewards
- Stress on greater discipline - cost-cutting and resisting interest groups such as public sector unions

### **General criticism of New Public Management**

Despite the positive impact, NPM has also proven some negative side effects. At present, criticism of NPM can be summarised in three major points. The first one is the concept of 'the Emperor's new clothes' meaning that the changes shine on the surface of public administration, but underneath old problems remain (Hood 1991). The second point is that in effect, when (new) reporting systems are implemented in an effort to lower the cost per service, more bureaucratisation is also introduced. The result is that the public sector suffers a loss of image in the public eye (Vigoda-Gadot and Meiri 2008). The third common criticism is that the interests of the 'élite group' of new managers is supported rather than the interests of the much larger group of public servants or public service customers (Pollitt 1990). That being said, the overall positive impact of NPM in the international context is still very impressive (Vigoda-Gadot and Meiri 2008).

#### **2.3.2.2 Drivers of the global reform wave New Public Management**

The key drivers of the international reform agenda NPM include the increase of efficiency through privatisation, decentralisation and downsizing, as well as Europeanisation and public service orientation (Benz and Goetz 1996). Privatisation is the transfer of public assets into private ownership and is strongly pronounced in the



UK (Benz and Goetz 1996). The “*anti-public sector-/pro-private sector conservatism*” of the Thatcher government in the UK in the 1980s is often seen as the driving force of NPM (Burnes 2009, p.113). A large amount of privatisation has also taken place in countries with a high level of public industrial ownership like France and Italy (Benz and Goetz 1996). Decentralisation and downsizing strengthen the sub-central government through regionalisation and federalisation (Derlien and Peters 2008). Supported by the Single European Act 1987, decentralisation has occurred in Belgium, Spain and France. For a member of the EU, Europeanisation signifies the redefinition and implementation of changes concerning national administrative structures, policy-making procedures and instruments, public personnel and the substance of public policy (Benz and Goetz 1996). Finally, public service orientation can be characterised by a service quality level comparable with the private sector (Ferlie *et al.* 1997). Public service orientation includes the mission to achieve excellence in delivering the public goods and a reflection of customers concerns in the production process (Ferlie *et al.* 1997).

### **2.3.2.3 Comparison of the global New Public Management reform**

Over the past decades, public sector reforms have been implemented all over the world, varying only in time and expression (O’Flynn 2007).

Research differentiates patterns in the method, speed and size of how reforms are introduced. The following clusters have been identified the Anglo-Saxon countries are seen as forerunners and marketisers in the speed of implementing NPM reforms, while Continental Europe is viewed as a maintainer and latecomer (Kuhlmann 2010).

The group of marketisers share the following points: introduction of private sector techniques is seen as relevant for public sector reform, the culture is shaped by individualists and the ‘government’ is more important than the ‘state’. These countries support the introduction of more competition, such as the performance pay for civil servants, quasi-markets, and large-scale contracting-out (Pollitt and Bouckaert 2004). Part of the ‘core NPM group’ is New Zealand which implemented rapid developments resulting from dramatic changes in the organisation and management of the public sector between 1984 and 1990 (Ferlie *et al.* 1997). For instance, major changes occurred in the field of human resource management towards a decentralised and enterprise-based system, as well as in the field of commercialisation functions that are being performed by the public organisation (Ferlie *et al.* 1997). In addition, Britain could also be seen as a forerunner, it was a pioneer and implementer of NPM (Beaumont,

Pate and Fischbacher 2007). In retrospect, the changes triggered by the NPM wave in the UK can be characterised as one of the strongest. The changes took place in organisational and administrative arrangements and were linked to privatisation (Beaumont, Pate and Fischbacher 2007). Margaret Thatcher pushed through the reforms in the middle of the 1980s (Eliassen and Sitter 2008). The reform wave in the USA started in the 1980s and was triggered by the Reagan administration. It demonstrated a scientist, generalist, and measurement-based approach with a particular focus on the civil service (Ferlie *et al.* 1997). Pollitt and Bouckaert (2004) would also add Australia to the group of forerunners.

The second group, the modernisers, includes Belgium, France and Italy. This group was more “*adventurous*” (Pollitt 2007, p.19). The state played a very important role, but the need for administrative reforms with a focus on budgeting was high. Key characteristics of the group were: budget-reform towards result-orientation, reduction in rigid personnel structures, extensive decentralisation and improvement of public sector output (Pollitt and Bouckaert 2004). The northern European countries, such as Finland, Sweden and the Netherlands, tended to be more participatory in the way modernisation was implemented which was expressed through the development of customer-oriented, high-quality service and public participation. The central European countries of Belgium, France and Italy, focussed on managerial modernisation. These countries concentrated on management systems, tools, and techniques (Pollitt and Bouckaert 2004).

Before 1980, Germany belonged to a group which was characterised as latecomers and laggards. The demand to introduce change was low despite being faced with a shrinking budget. The conservative strategy of this group was focussed on maintaining existing structures as much as possible without fundamental changes (Wollmann 2000).

One reason for the different reform pace and depth was the administrative culture which in turn, influenced the reform-willingness. Pollitt and Bouckaert (2004) have categorised, in particular the European and Anglo-Saxon countries, into the following three groups of administrative culture: constitutional states, public interest, and those who straddle between these two positions. Germany is a constitutional state and therefore it acts as a central integrating force within a society that cares for the preparation, execution and enforcement of laws. Hence, civil servants are highly educated in public administrative law related topics (Pollitt and Bouckaert 2004). The supervision of the German constitutional state lies with the Federal Administrative Court. Civil service culture is characterised by rule-following, correctness, respect for

the authority of the law and attention to precedents (Benz and Goetz 1996). König (1997, p.222) states that

*“in countries like France and Germany, the issue of NPM in the civil service meets with cultural premises that differ from those in Anglo-Saxon countries”.*

An alternative administrative system to the constitutional state is termed public interest, and this type of administrative culture is common in Anglo-Saxon countries such as Australia, New Zealand, and the UK (Pollitt and Bouckaert 2004). In this system, civil servants act as employees of the state and not as a state representative. Law is also an important factor but civil servants are mostly generalists and do not have special training in law (Pollitt and Bouckaert 2004). The third group consists of the Netherlands, Finland and Sweden and countries straddling between these two administrative cultures. These states shift away from a highly judicial administrative culture in the direction of a consensual approach. Civil servants come from a wide variety of disciplinary backgrounds, are trained in law and their work atmosphere is characterised by ‘meso-corporatist intermediation’ (Pollitt and Bouckaert 2004).

In comparison to other countries, the public enterprise sector in Germany in the 1980s was smaller and less costly than in the UK, France, or Italy. That is the reason why privatisation is only part of NPM, but not a core element in Germany (Benz 1995). Germany could be considered as the backwater of administrative developments (Benz 1995). The implementation of reform in Germany can be described as a process of continuity and stability (Benz and Goetz 1996).

With the introduction of the German version of NPM in the early 1990s, the pace and rate of public sector modernisation in Germany was on the level of the international modernisation discourse (Wollmann 2000). The implementation of democratic procedures on a local level, such as local referendums and the direct election of mayors, catapulted Germany into the front row among European countries. From that time on, Germany was classified in the group of modernisers (Wollmann 2000).

### **2.3.3 Globally used New Public Management tools**

In order to describe the NPM tools, two dimensions of NPM reform activities can be distinguished. On the one hand, there is the dimension of reforms that focus on the internal, local level aiming to reorganise administrative structures and to change financial and human resource systems (Kuhlmann 2010). The internal activities vary greatly and they differ from country to country. On the other hand, the NPM approach tries to reorganise the external level, the tasks between the state and the market.

### **2.3.3.1 Organisationally-oriented New Public Management**

The internal dimension refers to the public management reforms in the local service unit (Kuhlmann 2008). Different attempts are taken to achieve an internal decentralisation of performance, to found profit centres as executive agencies, to concentrate on output rather than input, to implement performance measurement and accounting tools and to focus on human resource management as well as on customer orientation (Kuhlmann 2010). While Germany used an approach derived from the NPM approach, called New Steering Model (NSM), other countries adopted and interpreted NPM-reform in structurally and culturally related ways.

France, for example, implemented NPM guided reforms that were initiated to introduce performance and quality instruments to be measured and monitored by a controlling tool called 'performance tables'. Decentralisation efforts were not part of the reforms in France. Like Germany, the French local government implemented a service project called 'projects de service' which reacted to the demand for higher customer orientation. The German 'one stop citizen offices' can be found in France, too (Kuhlmann 2008). These reforms were limited to major cities where as the French population living in the countryside is excluded (Kuhlmann 2008). In contrast to Germany, France has never had a holistic concept for local public management reforms (Rouban 2008).

Another example is Italy. In 1995, the Italian government invented the management plan called 'piano esecutivo di gestione' to force the implementation of new controlling practices and instruments. It aimed to find a way of agreeing on targets of displaying indicators of inefficiency. Nearly all municipal authorities implemented, on a formal basis, financial target management and a controlling system (Kuhlmann 2010). Even though these facts that the NPM-initiated reforms have so far been the most advanced, the implementation wave has been stopped after ten years. The budgetary method is still more input oriented, only few municipal authorities have set non-financial targets and customer orientation is still in the early stages (Ongaro and Valotti 2008).

### **2.3.3.2 Externally-oriented New Public Management**

The focus of the externally-oriented NPM reforms is on the implementation of strategies that are efficiency-focused and an attractive way to solve problems related to public bureaucracy (Ma 2003). That means that for the production and delivery of public goods, the organisational structure of public organisation can differ. Tomkins

(1987) creates a spectrum of organisational management types, ranking from the fully private to the fully public which is closed to competition. He starts with the version of a fully privatised company, a field where no issues e.g. social issues need to be protected and the private organisation acts in a competitive market. The next step in the spectrum is a private ownership organisation that is partly state-owned and has inherent potential for social issues to arise (Tomkins 1987). Here, the government is needed to protect public interests. In a joint private and public venture, a potential commercial risk is involved which the private sector does not want to fully bear. In the case of private regulation, the private sector acts within a legal framework imposing limits on their activities. This is followed by a version of public infrastructure and private operation (Tomkins 1987). Private industry depends on a public infrastructure to supply a service. By contracting out, the services are transferred from the government to a private supplier. For example, local authorities started contracting out services like maintenance of public parks and construction in the 1970s (Derlien 1996). Another step is the provision of services by the public in competition with the public sector (public with managed competition). Finally, public organisations produce goods without any competition (public without competition) (Tomkins 1987).

### **2.3.3.3 Focus on the New Public Management tool privatisation**

The objectives of the reform waves in the public sector are the attempts to reduce deficit, to release public corporations from civil service law and to make them more manageable (Derlien 1996). To reach these goals, the main idea focuses on the opinion that the efficiency of public services can be improved by transferring them to the private sector. This transfer is called 'privatisation' (Bös 1991). The word privatisation has Latin origins and means stand-alone (Frey 2006). It is the organisational form of a fully privatised company.

Privatisation stands for the substitution of the publicly-planned provision of services for the provision of these services by the market. It can be defined as the exposure of a public service to competition (Halvorsen *et al.* 2005). Furthermore, it can be seen as a change in the objective of the owner from the welfare to profit maximisation (Bös 1991). Privatisation refers to the transfer of any governmental function to the private sector, including functions like revenue collection and law enforcement (Halvorsen *et al.* 2005). The transfer of assets and tasks is closely linked to terms like denationalisation and 'more market less state' (Frey 2006). The focus of privatisation efforts is placed more on microeconomic efficiency criteria than on the social aspect of the state action (Kraus 1997).

Privatisation is also linked to liberalisation. Liberalisation stands for the introduction of competition in areas that are dominated by a few suppliers (Eliassen and Sitter 2008). Privatisation is also the opposite of nationalisation. As a narrow term, privatisation stands for the transformation of publicly-owned property to privately-owned property. It describes the complete and unconditional transfer of a publicly-owned enterprise (Bös 1991).

The broader definition of privatisation includes two cases - firstly, the transformation of publicly-owned enterprises to another publicly-owned enterprise. The state still has the possibility to influence management decisions. Secondly, the transfer of the publicly-owned company to the private sector combined with regulation by a state authority (Bös 1991).

The main objectives of privatisation start with strengthening the free market economy and increasing the productivity in the economy; continuing with the improvement of the distribution of income and the diversification of the base of capital ownership and finally ending with the development of the capital market (Keller, Docan and Eroglu 1994).

### **Objectives of privatisation**

Privatisation is not an end in itself, but is usually a response to obvious inefficiencies that occur in the public sector (Hamer and Gebhardt 1992). However, a large amount of economic theory claims that individuals aim to maximise utility for selfish reasons and that they only focus on the maximisation for their own utility (Bartel and Schneider 2007).

Specifically, the reasons why privatisation has a positive impact on the efficiency of companies are (regulatory) politically, efficiency, fiscally and ideologically motivated and result from indirect reasons. The political arguments can be divided into regulatory, competition and socio-political policies. The discussion about privatisation is attributed to the fundamental questions about the relationship between market and government (Von Weizsäcker 1988). Due to the objectives of the social market economy, the state provides an environment for a privately owned means of production, entrepreneurial freedom and competition. Public enterprises are allowed to intervene in the case of inefficient provision of services (Budäus 1982). From the regulatory policy point of view, privatisation stands for the regulation of behaviour through competition and not via government intervention (Osterloh 1995). Privatisation includes a shift of power (such as prices, investments and technology) from the public bureaucrats to profit-oriented shareholders and reduces, at the same time, the influence of, for example, trade

unions (Bös 1991). Furthermore, Hamer und Gebhardt (1992) have stated in regards to the market-economy idea, that the system of ordering should give priority to private companies and privatisation. Due to competition policy, the participant of both the state and a private company in the same market might create a market imbalance. The support of mostly inefficient public enterprises though compensation of losses leads to a distortion of competition (Hamer und Gebhardt 1992). Privatisation supports a structure of decentralised competition through the dissolutions of centralised, public pattern of offer and the transfer of the service provision to small and medium-sized enterprises (Ahnefeld 2007). Privatised firms improve through market competition in terms of profitability, speed, efficiency and cost-consciousness which leads to a higher return for the new shareholders, higher salaries for workers and expanded job opportunities (Kikeri and Nellis 2002). Turning to the social aspect, critics claim that privatisation leads to a massive loss of workplaces. Megginson, Nash and Van Randenborgh (1994) have confirmed in a study carried out among 61 enterprises in 18 countries that this development proves to be only a short-term effect. In the second year, 64% of the companies employed on average more people than before. In the long-term perspective, privatisation creates new jobs. Famous examples of formerly state-owned companies are British Telecom, a global player and one of the largest telecommunications service companies worldwide, headquartered in London and British Steel, once a British steel producer now owned by Tata Steel (Megginson, Nash and Van Randenborgh 1994). To increase efficiency is the main reason for privatisation. In comparison to the public provision of service, private production is more efficient (Ahnefeld 2007).

There are many different theories that try to find the source of this inefficiency of the public provision and reasons for the privatisation. The principal agent theory treats the difficulties that arise under conditions of incomplete and asymmetric information (Frey 2006). This biased information favours the individual agent, who has more information about a firm than the capital owner to pursue personal goals. Agents have a better knowledge of the market than principals and are interested in undervaluing the firm to minimise their sales and to maximise the success. A regulation of agents is almost impossible (Parker 2004). In a competitive market, the capital owners' behaviour of buying and selling shares would be enough to overcome the divergence of principals' and agents' interests. The owner could sell their shares in the case of underperformance. It is a pervasive problem and exists in practically every organisation (Bartel and Schneider 2007).

The public choice theory maintains that within government, self-interest is the main motive of action and has the repercussions that the image of state ownership is equated with economic waste. Public choice theory studies the behaviour of politicians and government officials who are mostly self-interested agents and it investigates their interactions in the social system (Parker 2004). Democratic representatives tend to maximise their personal, rather than the common utility. In order to be re-elected, politicians are tempted to utilise public institutions to achieve short-term goals without focussing on long-term effects (Bartel und Schneider 2007). The combination of the principal agent and public choice theory provides a theoretical basis and rationale for privatisation (Parker 2004). There are other theories explaining public service inefficiency, one of them being the x-inefficiency theory cited by Leibenstein (1978) which deals with the problem of limited rational behaviour. If a firm is producing at maximum output, i.e. given the resources and technology, it needs the status of technical-efficiency is reached. X-inefficiency occurs when technical-efficiency is not being achieved due to a lack of competitive pressure. In a market with an active public sector, it may be possible for x-inefficiency to persist because the lack of competition makes it possible to continue to use inefficient production techniques and still stay in business (Frey 2006).

Another reason for the inefficiency of the public sector is the problem of adverse incentives resulting from a lack of incentives. Once a bureaucratic system stifles the initiative to reach the organisation's economic targets more efficiently, the employees choose for example, to pursue personal goals under the given circumstances (Bartel and Schneider 2007). Leibenstein (1978) points out that budget laws often punish economical behaviour. A budget surplus leads to a reduction of next year's budget irrespective of the economic situation. Therefore, public managers are left with no alternatives (Bartel and Schneider 2007).

Fiscal policy includes financial one-off effects that result from the revenues from privatisation and lead to financial relief in the public budget (Ahnefeld 2007). Von Lösch (1987) states that beside the budget effect, the avoidance of a capital contribution in the course of an increase of capital stock are the main reasons for privatisation. In addition to the one-off effects, privatisation achieves continuous periodic savings for the public budget. Because private companies are more efficient, the provision of services will be cheaper and the future total cost will decrease (Ahnefeld 2007).

Ideological motivation should also be mentioned. According to Bös (1991), widespread ownership of shares leads to a higher level of democratisation within a society. Democratisation is the principle for action in the market economy. Indirect reasons



include the fact that studies show a tendency towards corruption and an abuse of public position for personal wealth material in the public sector. The privatisation process lowers the risk of corruption because governments control fewer resources after dismantling, are less involved in the economy and provide public officials with less opportunity to extract pensions (Boubakri, Cosset and Smaoui 2009). Furthermore, privatisation leads to demand orientation through cost awareness. Once public institutions such as job centres are established, a decrease in the volume of demand does not lead to a reconsideration of the offering size of the authority (Hamer und Gebhardt 1992). Aside from demand orientation, pricing is a very important topic especially because public sector prices are not linked to demand. In cases of a low demand, the public sector raises its price and asks for adjustments through subsidies (Hamer and Gebhardt 1992).

Although the discussion about privatisation is enormous and never-ending, the ownership structure of organisations in private and public sector greatly influences the involved parties such as the state, the private sector, the employers, the employees, the unions, etc. (Frey 2006).

### **Objects and methods of privatisation**

Privatisation is mostly driven by financial reasons with the aim of budgetary relief. The relief is supposed to be achieved on the one hand by the revenue gained from the act of privatisation, and on the other hand, by the reduction in public expenditure, such as subsidies (Spelthahn 1994). Whether privatisation is generally deemed to be useful depends on a case-by-case basis. For example, if the debit interest for public loans is higher than the expected income of the public company, privatisation is deemed as desirable (Spelthahn 1994).

By definition, privatisation takes place when the right of disposal is transferred from the public to the private sector. This transfer focuses on assets or tasks and has to include the reduction of governmental access regarding financial or legal issues in the public sector (Frey 2006).

A key question concerning privatisation is: how to privatise? The decision is influenced by economic factors and political processes. These factors include the history of the asset's ownership, the financial and competitive position of the state-owned enterprise, the governmental view of markets and regulation, the regulatory structure in the country, the need to pay off interest groups, the capital market condition and so on (Megginson and Netter 2001).

Privatisation of assets is put into practice when through the privatisation, a rights holder changes from the public to the private sector (Brada 1996). Researchers have identified four general methods of asset privatisation and each method has many variations with some countries often using a mixture of them all (Ahnefeld 2007).

The first method is mass or voucher privatisation. Eligible citizens receive vouchers free of charge or at a nominal cost from the state to bid for stakes on state owned-enterprises. It might be attractive from an economic perspective because it maximises value, supports free and efficient markets, and fosters effective corporate governance. This method has been only used in the transition economies of Central and Eastern Europe (Brada 1996).

The second category is privatisation through the sale of state property. This is the case when a government sells state property like industrial assets to individuals through direct sales or through the issue of shares. The sale of state-owned property happened in Germany after the Reunification, when the state-holding Treuhand sold former East German enterprises (Megginson and Netter 2001).

Another category is privatisation through restitution. This describes the return of property and land that was expropriated by the state to the original owner. This is a common method in Eastern Europe (Brada 1996).

The last category is privatisation 'from below', popular in formerly socialist countries. This type of privatisation results from the displacement of formerly state-owned businesses through the start-up of new privately-owned businesses. The entry of new business in the market creates competition and market development. This leads to a decline of monopoly and state control. Mainly, these firms are small businesses, but the number has increased rapidly in the last few years (Megginson and Netter 2001).

The privatisation of public services describes the transfer of duties to the private sector in two ways. One way is called management privatisation and describes the transference of the usage rights and the tasks of the service provision to the private sector. Here, the private sector acts as an agent for the public sector. The legal and financial responsibility and default risk still lie in the public sector (Ahnefeld 2007). It is the aim of the privatisation measures to deliver a more efficient provision of public services. A second method is the 'privatisation of production'. The public sector transfers the legal and financial responsibilities to the private sector. In addition to the management, the public sector contracts out the production. Conversely, the private sector takes over the responsibility for the management and production of the public

service and goods. The private sector seeks a more efficient provision of services, a development of know-how and a relief for government finances (Ahnefeld 2007).

Task privatisation of public companies is supposed to result in a reduction of contributions, state subsidies and taxes. There are different methods of accomplishing this for example; transferring public duties to private companies while the public sector is still responsible for the task fulfilment is called an operator model. The operator receives a payment for performance and the distribution of the tasks takes place via a tendering procedure (Reiche 1999). A second concept is the cooperation model. Here, the public sector and a private company found a joint venture which is financed by private payments of shares. The cooperative venture is split between the public sector which holds 51% and the private company which adds 49%. The operator is an agent and not responsible for the service provision (Frey 2006). The third method is the concession model which includes the transfer of financial and legal implementation skills from the public to the private sector for a certain period of time (Ahnefeld 2007). The aim is to increase competition and avoid the formation of monopolies with the help of temporary tendering. The private sector takes on the responsibility for the investments, calculates the prices and pays the licence fee to the public sector (Frey 2006). This type of privatisation offers the possibility to reduce the public contribution. With this type of privatisation, the public sector renounces the responsibility and right of control, and crosses the task off the list of public services (Schuppert 1997).

### **2.3.3.4 History and examples of the New Public Management tool**

While the New Public Management tool privatisation is mostly linked to the Thatcher government, Chancellor Adenauer in fact, introduced the first large scale ideologically motivated de-nationalisation programme in 1961 (Megginson and Netter 2001). However, although the Thatcher government was not the first to introduce privatisation, it was certainly the largest scale privatisation programme. Privatisation in Britain began in 1984 with the floating of British Telekom on the Stock Exchange (Megginson and Netter 2001).

In the following years, the focus of privatisation was on public services such as valet service, air traffic control and airport services (Hamer and Gebhardt 1992). Privatisation can be achieved by hiving off, which means transferring a function from the central government to public body. As a former government department, public bodies such as the Post Office Corporation and the Civil Aviation Authority are financially self-sufficient (Hamer and Gebhardt 1992). Another way in which

privatisation can be achieved is through government agencies. They are described as small independent units of governmental departments within the ministry. The agencies are responsible for the supervision and administration of specific functions (Hamer and Gebhardt 1992). A third way is when the government tries to reduce national debts by selling the company as a whole, as in the case of Cable and Wireless Limited (Hamer and Gebhardt 1992). The financial success of privatisation can be demonstrated in the following randomly selected examples indicating the money the government earned for the privatisation act: *“Rolls-Royce Aero £1.4bn (€1.6bn), British Airways £0.8bn (€1.0bn) and British Aerospace £0.6bn (€0.8bn)”* (Hamer and Gebhardt 1992, p.240).

This success convinced other countries to follow the British example (Megginson and Netter 2001). France privatised 22 companies in 1996 during the Chirac government (Megginson and Netter 2001). A famous example was the private construction and operation of a motorway which was refinanced by tolls collected from the building company (Hamer und Gebhardt 1992). The most successful privatisations in terms of the amount of money the French government received from the privatisation were: *“Societe General £2.3bn (€2.7bn), Compagnie Financiere de Paribas £1.8bn (€2.1bn) and Compagnie Generale d’Electricite £1.1bn (€1.4bn)”* (Hamer und Gebhardt 1992, p.111). France also included an interesting twist to their privatisation policy-making it possible for the customer to take legal action if prices of the privatised services and good increased after privatisation (Hamer und Gebhardt 1992).

Following the examples of privatisation, other European countries such as Italy and Spain started an extensive privatisation programme in the 1990s (Megginson and Netter 2001).

In these countries, well-known areas of privatisation were waste management (de-watering, disposal, etc.), general utilities (electricity, gas, water, etc.), real estate management (housing agency, real estate, etc.), transport (short and long distance, etc.) and logistics (Hamer und Gebhardt 1992).

### **2.3.4 New Public Management in Germany**

Managerialism was hardly visible at the beginning of the 1990s and for many decades, German bureaucracy had basically remained unchanged (Derlien 2003). In 1991, it became evident that processes were inefficient and costly. The role of politics and administration combined with the concept of a welfare state were questioned (Reichard 2001). A German scholar described the German situation at the beginning of the 1980s with the words,

*“extensive welfare state, reduced financial latitude, economic structural crises, and the internationalisation of public matters have put state administration under pressure to reform” (König 1996, p.31).*

#### **2.3.4.1 Internally-oriented New Public Management tools in Germany**

The German government started to implement different NPM related reform types. These reform activities focussed on the local level and can be characterised by the clear cut distribution of responsibilities between politics and administration, a system of contract management, integrated departmental structures and an emphasis on output control (Pollitt and Bouckaert 2004). This has led to reform elements such as the implementation of managerial instruments like budgeting (e.g. output instead of input orientation), performance measurement (e.g. decentralisation, profit centre) and cost accounting (e.g. performance measurement, new accounting system). An expert team of local government representatives and practitioners, known as the Municipal Association for Administration Management (*Kommunale Gemeinschaftsstelle für Verwaltungsmanagement KGSt*) developed this reform concept calling it the New Steering Model (NSM), which is basically a model for performance-oriented administration in local government (Reichard 2008). This steering model is based on reforms to public administration carried out by the city of Tilburg in the Netherlands, which impressed the German KGSt think-tank (Ridder, Bruns and Spier 2005). This type of reform is predominantly a reform from within local communities and from practitioners, without any pressure applied to the Federal Government or Federal State level (Reichard 2003). Almost all German local communities (80%) with more than 10,000 inhabitants initiated activities according to the NSM concept (Kuhlmann 2008). The concept implements different approaches of reform concerning the wide-ranging administrative bodies of the local self-administration (Reichard 2008).

The activities carried out in accordance with NSM encompass around ten distinct elements:

- (1) Result-oriented department structures*
- (2) Strategic steering units and*
- (3) Decentralised and operative controlling*
- (4) Replacing central resource management units with internal service centres*
- (5) Reduction of hierarchical levels*
- (6) Decentralised management of resources*

- (7) *New budgeting procedures*
- (8) *Output analysis (which is a definition of service products)*
- (9) *New accounting systems and*
- (10) *Introduction of a reporting procedure* (Bogumil *et al.* 2008, p.40)

The majority of the local communities report a number of positive effects resulting from the NSM movement. Interestingly, according to a survey made by Kuhlmann (2010) ten years after the introduction of the NSM, not one single element had been introduced by all local communities. About 60% of the German municipal governments have instituted one-stop-agencies and about 70% have introduced longer opening hours. Kuhlmann (2010) reports a reduction of administrative processes in 50% of the local communities. Furthermore, the local communities signal that they have achieved an increase in customer orientation (95%) and service quality (90%). Positive results have also been reported from the introduction of new budgeting procedures used by about 33% of the local communities. According to the respondents, a connection between the NSM reform and the improvements is visible (Kuhlmann 2010).

Nevertheless, local government efforts to decentralise are also linked to negative effects. The lack of appropriate controlling or steering systems and the reduction of hierarchy led to autonomous and decentralised one-stop-agencies which do not interact with each other or try to introduce efficient processes (Kuhlmann 2010). Furthermore, a management vacuum is created from the autonomous and decentralised centres which increase the transition costs between the local and Federal Administration levels (Bogumil *et al.* 2008).

Since 1998, further attempts have been made to make the state leaner by reducing the number of social transfer programmes for example the health services and pension systems. Milestones have been the reduction of public tasks combined with the reduction of the size of personnel, the increase of working hours and the reshuffling of civil servant to non-civil servant status (Derlien 2003). The phase of reorientation of state function is attempting to emphasise civic society, to rearrange labour and social policies, and to liberalise and deregulate utilities (Reichard 2008).

#### **2.3.4.2 Influences of New Public Management on human resource management reforms**

In the context of NPM, the reform wave also reached the field of personnel management in the public sector at the beginning of the 1980s. The changes in the personnel sector have followed after other NPM innovations as for example, in the

financial management (Van Thiel, Steijn and Allix 2007). The influence of new management ideas seems to be of minor priority and was not the driver of NPM reforms (OECD 1996).

Elements of the reforms were focussed on performance, an increase in the value for money, the enhancement of managerial flexibility, the strengthening of accountability, an increase in service-orientation, a strengthening of the capacity for developing strategy and the increase of efficiency (OECD 1996). The introduction of changes in the HRM as an integral part of the NPM reform is only visible in a few countries. The Anglo-Saxon and the Northern European countries placed emphasis on the management of people while continental Europe focussed on managerial flexibility (OECD 1996).

To implement reforms in systems such as a constitutional state is a slow process. For instance, the German civil service system is a product of the 18<sup>th</sup> century and remained largely unchanged until the German reunification (Derlien 2008).

Only a small number of reforms took place in the past. One of them was the implementation of a new programme of study at the University of Konstanz in 1973, which focussed on public policy in the field of public administration. A small number of universities followed this example. However, in comparison to other countries, the institutionalisation of administrative sciences is weaker and the recruitment strategy focuses on law rather than administration (Reichard 2008).

In 1986, Baden-Württemberg opened an academy called Speyer Graduate School to train an elite few for higher civil service. The school is financed by both the Federal Government and the Federal States and offers free access for students. It also provides special training programmes for young high performers. Since 1987, equal opportunity policies for women in the public service have been introduced to compensate disadvantages at all career levels (Derlien 1996).

A further reform with working provisions and an incentive system for civil servants was put into effect in 1989. In response to the financial deficit of the German Federal Government due to the German reunification, the need of public service and the cost of a welfare state were questioned due to the high expenses (Derlien 2008). Key drivers for the looming desolate financial situation in the German public sector were the impact of the German reunification and the explosion of pension costs incurred when a high number of civil servants entered retirement (Derlien 2008).

In 1994, the Public Service Reform Act passed. The NPM-related human resource reform is characterised by the aim to increase flexibility and responsiveness as well as enhancing skills (Pollitt and Bouckaert 2004).

In order to generate a lean state which should symbolise the public service mission statement of Chancellor Helmut Kohl in 1997, the Federal Ministry of the Interior has launched a list of changes introducing additional civil service reform. These reforms included the introduction of performance-related pay, promotions on probation; accelerated automatic pay increases every two years and the possibility to enter into civil service on a part-time basis (Derlien 2003).

The attempts to reform the civil service system in Germany are challenging. For Reichard (2003), the civil service system is a non-reformable element of the German politico-administrative system because its power lies in constitutional protection that makes radical change impossible (Pollitt and Bouckaert 2004).

### **2.3.4.3 Influences of New Public Management on Person-Environment fit concept**

Drawing on the change experiences in the private sector, a significant conceptual change has transformed the old style of public administration into a new approach of public management. The NPM has become very influential in public management theory and practices and has contributed to a change in the business orientation of the public sector (Vigoda-Gadot and Meiri 2008). The NPM approach to public administration has drawn and continues to draw a large amount of attention. NPM reforms have the intention of introducing a higher market and customer orientation through an increase in effectiveness and flexibility (Vigoda-Gadot and Meiri 2008). As the literature illustrates, the topic of NPM is relevant to political, administrative and strategic discussions. NPM researchers focus on practices, experiences, perspectives and case studies among nations and bureaucracies in selected countries. Open questions about values, values-fit, cultural change and compatibility of the individual mean that P-O fit, with the changing organisation, has not yet been addressed up until now (Vigoda-Gadot and Meiri 2008).

### **2.3.4.4 Externally-oriented New Public Management tools in Germany**

Privatisation, as an externally-oriented tool, started early in Germany with the German government selling a majority of its stakes in Volkswagen which occurred



approximately 20 years before other nations chose privatisation as a core economic or political policy (Megginson and Netter 2001). In Germany, the boldest steps were taken between 1980 and 1990 at the Federal level (Benz and Goetz 1996). In the beginning of the 1990s, Germany moved toward modernising the state and public administration. Part of this movement was the balance between the public and private sectors. The numbers of industrial assets held at Federal level were reduced from 899 to 411 (Benz and Goetz 1996, p.5). These withdrawals at the Federal level happened at companies like Lufthansa AG and Vereinigte Elektrizitäts- und Bergwerks AG (United Electricity and Mining public limited company) (Benz and Goetz 1996). The situation in Germany after WW II differed from the UK and France where the large-scale nationalisation of industries took place (Derlien 1996).

The basic constitutional law of the Federal Republic of Germany (FRG) that was adopted in 1949 did not include a legal provision for privatisation. In the 1990s, privatisation regulations of certain state-owned companies were incorporated into constitutional law. This step was necessary because these laws provide companies like the DB AG with a direct Federal Administration with its own administrative substructure (Maurer 2009).

The present constitutional law at both Federal Government and Federal State levels show that there are no legal restrictions to privatisation. Starting with socialisation (Section 15), the natural resources and means of production may for the purpose of socialisation be transferred to public ownership. The socialisation authorisation of common property was not applicable to privatisation activities (Von Arnim 1995). Emphasising the welfare state principle (Section 20 Subsection 1), it is constituted that 'the Federal Republic of Germany is a democratic and social Federal State. According to Von Arnim (1995), the state ensures a universal service that can be delivered by private and public companies. The rule of law (Section 20 Subsection 2 and 3), includes that all state authority is derived from the people and that the legislature shall be bound by the constitutional order, the executive and the judiciary by law and justice. Ensuring law and order, the state has a monopoly of force which embodies, for example, the police and jurisdiction. The administration of service such as maintenance of buildings can be carried out by the private sector (Maurer 2009). The public service privilege (Section 33) encompasses the exercise of sovereign authority on a regular basis, shall, as a rule, be entrusted to members of the public service who stand in a relationship between service and loyalty defined by public law. According to these sections, only in exceptional cases are non-civil servants allowed to exercise sovereign activities. The basic function of the state's main tasks remains with the state, which

means privatisation of sovereign tasks cannot be an option in the future (Däubler 1980).

The discussion about privatisation is influenced by aspects of the Budget Act. Section 7 of the Budget Act is about 'economy and thriftiness, costing and performance calculation' and Section 65 is a subsidiary clause of the Federal Budget Law both sections point out the need for cost-consciousness in case of a desolate situation. Section 7 of the Federal Budget Law states that "the principles of economy and thriftiness have to be considered in the process of establishing and implementing the budget" (Von Arnim 1995, p.XVIII). The Federal Government, the Federal States and local authorities are bound by the principle of sound financial management which obviously has an impact on privatisation activities (Von Arnim 1995). Furthermore, according to Von Arnim's (1995) interpretation, inefficient actions are actually unlawful. Inefficient action is present when the same objectives can be achieved with less effort. The principle of sound financial management requires checking to what extent state functions can be executed through outsourcing or privatisation and denationalisation (Von Arnim 1995). Finally, Section 65 of the Federal Budget Law states that the Federal Government should

*"take part in the foundation of a business with a legal form under private law, or with an existing company in such a legal status only if an important Federal interest exists and the intended purpose cannot be achieved by an alternative"*  
(Von Arnim 1995, p.XIX).

As a result, the Federal Government is limited in its economic activities and has the obligation to privatise. Section 65 of Federal Budget Law does not embrace the pursuit of profit maximisation (Von Arnim 1995).

An appropriate example to visualise the privatisation efforts as a part of the NPM in Germany is the case study of the DB AG which is presented in the Chapter 3.

### **2.3.5 Summary**

The public sector is the part of the economy concerned with providing basic government services. These services (including police, military, public roads, public transport, education and healthcare) are provided for society at large and no one is excluded. The services benefit society as a whole, rather than only the individuals using them (Boyne 2006). Public organisations, as part of the public sector and producer of the services, are funded by taxation and not solely by citizens who consume the service (Boyne 2006).

Providing public services by public organisations is costly and especially in times of financial-hardship, the duty, role, complexity and size of the public sector is questioned. This has led to tremendous changes since the 1980s that are still on-going. These changes have had a considerable impact on public sector organisations worldwide (Ferlie *et al.* 1997). When private or public organisations struggle with downsizing, quality initiatives and changes concerning job structures, the necessity of a high organisational commitment or job commitment is essential to keep the organisation running (Kristof 1996).

In comparison to the private sector, public sector organisations are more bureaucratic (Devos and Bouckennooghe 2006). Bureaucracy is an organisational structure and a management theory mainly found in large-scale and public sector organisations. The key aim of bureaucracy is to eliminate inefficiency and establish stability in the organisation. This is accomplished by the principal of hierarchy and 'management through written files'. The organisation is ruled by laws and regulations and positions based on expertise and training (Meier and Hill 2005). Critics argue that bureaucracy often has conflicting characteristics, such as hierarchy and discipline which aims to organise working processes but actually organises people from the social environment of an organisation instead (Senior and Swailes 2010). However, so far no adequate alternatives to bureaucracy have been developed (Meier and Hill 2005).

During the last two decades, pressure to increase efficiency in the public sector has led to the introduction of a set of managerial beliefs and ideas. This set of beliefs and ideas are summarised under the term New Public Management (Ferlie *et al.* 1997). NPM is a wave of global reforms with varying impact on the public sector in the various countries in which they are implemented. Several variations of NPM-reform have emerged due to local history, culture, and political and managerial leadership (Ferlie *et al.* 1997).

Basically, four key drivers dominate the wave of NPM-reforms: increasing efficiency, executing downsizing and decentralisation, improving excellence and public service orientation (Vigoda-Gadot and Meiri 2008).

The efforts to implement NPM-reform are directed both internally and externally. The internally-oriented reforms which were directed to optimise processes, have achieved a higher citizen and customer orientation, and a better information process and performance output on a local government level in countries like Germany, France and Italy (Bouckaert 2006). However, the change has also led to some problems. The new focus on customer orientation challenged the local public servants because the changes demanded a decentralised resource competence and a hierarchical subordination (Bogumil *et al.* 2008).

For Hood (1991), the externally-oriented drivers are mainly channelled in the increase of privatisation and decrease of government. According to Timney and Kelly (2000), the organisational tools of outsourcing and privatisation, in particular, shift the focus of public programmes from public policy development to private profit making. From the perspective of efficiency, privatisation can be a worthwhile management tool to save administrative costs and to increase efficiency. In terms of justice and popular sovereignty, privatisation may be problematic and can lead to alienation of the citizens towards the state and a mistrust of government (Timney and Kelly 2000). This does not mean however, that privatisation is always inappropriate. In many situations, it is useful for improving efficiency by reducing 'red tape' (Ma 2003). Red tape in this context is the regulation or rigid conformity to formal rules that is considered bureaucratic and can hinder or prevent action or decision-making.

Regarding Germany, financial pressure from the reunification forced the introduction of the NPM concepts in the 1990s. The German internal, locally-based activities that were inspired by NPM are called New Steering Model (NSM). The aim was to modernise the administration by introducing a performance-oriented local government model and a new budgeting procedure. The cuts in social service provision support the privatisation of public utilities and services (Benz 1995). Privatisation and corporatisation of local and Federal Public Services have not only affected the utility sector, but also Federal Public Companies such as the DB AG. The company DB AG serves as a case study and example for these privatisation efforts in Germany described in Chapter 3.

In conclusion, structural inertia is the reason why reforms in Germany are evolutionary and not revolutionary (Benz 1995).

### **2.4 Public Service Motivation in the public sector**

In the context of working in the public and private sector, motivation plays a major role. The word motivation is derived from the Latin word for 'move' and is a popular area of research among scientists, which is indicated by the high volume of motivation related literature (Rainey 2009). Although famous theorists like Taylor, Maslow, Herzberg and Adams have examined the topic of motivation, a universal definition of motivation does not exist (Vaislaviciute 2009). However, for the purposes of this thesis, the definition used by a person's desire to work hard and work well to the arousal, direction, and persistence of effort in work settings is applied and fits into the context of the thesis.

The public sector in Germany consists of a variety of participants who organise, steer and sustain the public sector. Actors are the state (which acts *inter alia* as employer

or/and customer), the citizen (who is an employee and/or customer), and the producers such as private and public organisations (which deliver the public goods).

This section deals with the participants and the interactions that form the public sector in a society and display a diverse level of motivation. The section revolves around the actors in the public sector who are on one hand, the public sector as an employer and on the other the people working in it, such as public and civil servants.

The key issues discussed in this section are: Do public and civil servants display work-related motivation? Does public service motivation draw people to a job they perceive to be designed to promote the public interest and public welfare? Do civil servants display a higher job and organisation-related fit than non-civil servants?

There are further differences in working conditions aside from the obvious and above-mentioned differences between civil servants, public servants and private sector employees (Goulet and Frank 2002). Most research on this topic, albeit in various directions, has always focussed on the differences between public and private employees. These differences apply mainly to work-related values, reward preferences and personality types (Posner and Schmidt 1996) and in further studies, more on job satisfaction and job involvement (Crewson 1997).

Some studies concentrate on the topic *“willingness of people to serve in the public sector”* (Rainey 2009, p.263). They note that civil and public servants attach higher importance on intrinsic incentives like *“being useful, helping others and achieving accomplishments in work”* than private sector employees (Rainey 2009, p.263). These attributes are characteristics for jobs in the public sector (Rainey 2009). For example, fire-fighters and medics care for people’s lives and the police protect the public (Vaisvalaviciute 2009). Furthermore, studies show that attitudes towards payment as a performance driver and motivational factor also differ. Rainey (2009) argues that the payment level in the public service sector is similar to the private sector, but public servants pay less attention to this factor (Lewis and Frank 2002; Khojasteh 1993).

Other studies have concentrated on the risk preferences of public and private sector employees. Those in the public sector can be characterised by the avoidance of risk and concomitantly, values like job-security are rated higher by the public sector (Buurman, Dur and Van den Bossche 2009). Security and benefits seem to be the top levers to increase the motivation of public servants (Houston 2000). Furthermore, Rainey (2009, p.264) observes that *“challenging, significant work and the opportunity to provide a public service”* are often the key satisfaction indicators of civil and public servants. Jurkiewicz, Massey and Brown (1998) claim that civil and public servants

place much more value on the possibility to learn new things than private sector employees do. Furthermore, Posner and Schmidt (1996) state that business executives put more emphasis on morale, productivity, stability, efficiency and growth than Federal Executives do. They prefer performance indicators such as quality, effectiveness, public service and value to the community. According to Jurkiewicz (2000), the satisfaction attributes might change over the decades, but the value framework remains the same.

The overarching topic is the Public Service Motivation (PSM).

### **2.4.1 Theoretical background of Public Service Motivation**

Before talking about PSM, the term Public Sector Motivation should be discussed. It has been found that people working in the public sector are attracted by the government or government related organisations (Perry and Hondeghem 2009). The key driver here is the quality of life. The public sector has a positive image concerning the flexibility of work-life balance, opportunity for learning and development, as well as security of tenure and a solid pension system. Public Sector Motivation is a broader term in the motivation concept and includes PSM (Perry and Hondeghem 2009).

The term PSM was first mentioned by Rainey (1982). He used the term to explain the phenomenon of motivation connected to the public sector. Perry and Wise (1990) picked up the idea of PSM and developed a more elaborate concept of PSM where they define this term. For some years, PSM was an important public administration concept for practitioners and scholars. Practitioners wanted to learn the impact PSM has on critical human resource issues like attracting young highly educated people to public service. Scholars were interested in developing tools to support the search for people with a high PSM level (Vandenabeele and Van der Walle 2009). PSM is certainly an important topic as it affects the public servants' activities and needs, but in addition it has an impact on the welfare of society (Vaisvalaviciute 2009).

PSM is characterised by the *“desire to serve the public interest”* (Rainey 2009, p.266) and it can be described as having altruistic motives to serve the public sector (Bright 2008). Perry and Wise (1990, p.368) define PSM as

*“an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions and organisations”.*

For Perry (1996) motives can be seen as psychological deficiencies or needs that an individual feels some compulsion to eliminate. Some researchers have adapted this

definition and others have developed their own. Vandenabeele (2007, p.546) characterises PSM as

*“the belief, values and attitudes that go beyond self-interest and organisational interest that concern the interest of a larger political entity and that motivate individuals to act accordingly whenever appropriate”.*

Brewer and Selden (1998, p.414) see PSM as *“the motivating force that makes individuals deliver significant public service”*. Rainey and Steinbauer (1999, p.25) declare PSM as

*“a general altruistic motivation to serve the interests of a community of people, a state, a nation or humankind.”*

For Perry and Wise (1990, p.368),

*“public service is a concept, an attitude, a sense of duty – yes, even a sense of public morality”.*

The concept of PSM was subsequently developed by a number of scientists. In a very early stage of PSM research, Buchanan II (1975) was one of the first scholars who investigated reward preferences and concluded that there was a higher job involvement of civil servants than non-civil servants. Rainey (1982) contradicted Buchanan's findings and reported a strong positive relation between public and civil servants and job satisfaction. In 1990, the concept of PSM was theoretically and empirically developed by Perry and Wise (1990).

Concerning demographic factors, research shows a trend that individuals with a high level of PSM tend to be female, highly-educated, less likely to be attracted by income and more by non-monetary offers (Pandey, Wright and Moynihan 2008). Naff and Crum (1999) stated that people with a high PSM level enjoy greater job satisfaction and are less likely to leave their jobs. People with PSM orientation are more tolerant towards bureaucracy and more committed to their work (Brewer, Selden and Facer II 2000). They contribute to public welfare and to helping each other and their fellow citizens (Kim 2006). Brewer and Selden (1998) noted that a higher PSM level is related to greater willingness to engage in informing on illicit activities.

Perry and Porter (1982) identified motivational factors for public and civil servants such as structures, rules and features. Pandey, Wright and Moynihan (2008) maintained that individuals are often motivated by collective goals, which do not necessary serve self-interests. Different studies give evidence and explanations as to how PSM shapes individual attitudes and behaviour (Pandey, Wright and Moynihan 2008). For example,

the high value placed on work that supports and benefits society involving self-sacrifice and showing a sense of responsibility and integrity is related to a high level of PSM.

Besides the research focussed on self-sacrifice, a few researchers emphasised the relationship between PSM and performance. Naff and Crum (1999) stated that people with a high PSM level are more likely to be high performers. Leisink and Steijn (2009), Frank and Lewis (2004) and Naff and Crum (1999) have found evidence that links PSM and individual performance. Kim (2006) stressed the relationship between PSM and the performance of an organisation. The relationship between PSM and daily work behaviour has been investigated by a number of researchers such as Andersen and Serritzlew (2009). Leisink and Steijn (2009) and Lewis and Frank (2002) have examined the relationship between PSM and the process of selecting the government as an employer of choice. The relationship between PSM and informing on illicit activities, PSM and job security in the public sector and PSM and public interest has been shown by Brewer and Selden (1998). Finally, Naff and Crum (1999) have found evidence relating PSM and thoughts about quitting working for the government.

Altogether, for Rainey (2009) PSM reflects a positive relation to organisational commitments, work satisfaction, perceived performance, interpersonal citizenship behaviour and charitable activities. Furthermore, Rondeaux (2006) wrote that public service is often seen as a vocation.

### **2.4.1.1 Motives for Public Service Motivation**

Perry and Wise (1990) identify different theoretical categories of PSM motives associated with PSM that can be overlapping. The categories include motives that are rational, norm-based and affective. With rational motives, individuals believe that their personal interests coincide with the interests of the majority. They participate in a public programme because of personal identification with it and act as an advocate for a special or personal interest. Those acting upon norm-based motives desire to serve the public interest (altruistic) linked to the motives of patriotism, duty, and loyalty to the government. The affective category of motives is based on human emotions. People are driven by the desire and willingness to help patriotism of benevolence.

By analysing concepts of motivation, Brewer, Selden and Facer II (2000) were able to identify different groups of motivated individuals in public service. One cluster is termed samaritans, those who express a strong motivation to help others. The communitarians are stirred by sentiments of civic duty and the patriots work for causes related to the



public good. The last cluster is the humanitarians, those who are driven by a sense of social justice.

In 2007, Le Grand (2003) provided an additional way for describing and distinguishing civil and public servants. The knaves and knights concept expresses the orientation towards performance in the public sector. As self-interested people, knaves help others when it helps them to reach their own interests. The knights support others without personal gain. Knights can be categorised either as act-irrelevant or act-relevant. Act-irrelevant people help others due to compassion or feelings about the unfairness of others and hence, can be seen as impurely motivated (Le Grand 2003). Act-relevant knights feel a sense of duty, obligation or personal satisfaction in helping people. They display high altruistic motivation and are thus seen as purely motivated helpful people. Le Grand (2003) assumes that altruistic motives appear in various forms ranging from compassion, to duty and a desire to conform. These studies confirm the multi-dimensional aspect of PSM (Le Grand 2003).

### **2.4.1.2 Measurement of Public Service Motivation**

Perry (1996) transferred the PSM theory of rational, norm-based and affective motivation categories into a measurement scale and tested the scale with the help of factor analysis. The factors confirm Perry and Wise's (1990) results and can identify several motives of public servants that are more intrinsically than extrinsically orientated. In detail, the motives are attractiveness to policy, participation and commitment to public interest, compassion and self-sacrifice. The rational motive provides personal benefit and includes policy-making and participation (Wright 2009). The next motive could be termed as a personal interest in public programmes. The compassion and self-sacrifice dimension represents service as a social response to the public. The norm-based motives display a desire to serve the public and fall into the dimension of commitment to public interest (Wright 2009). Perry and Wise (1990) omitted the dimensions of social justice, civil duty and compassion, which were included in the original study. This omission can be explained by the fact that the respondents could not discriminate between all constructs of norm-based motives. The three motives and four dimensions encompass a comprehensive and theory-based conceptualisation of PSM.

Vandenabeele and Van der Walle (2009) came to the conclusion that studying PSM is equal to measuring a set of attributes related to public service. Since the development of the scale, many studies have used Perry's (1996) categories and concepts.

Researchers such as Kim (2009), Vandenabeele (2008) and Taylor (2007) improved the limitation of Perry's measurement and added further items to the measurement scale. Perry and Wise (1990) assumed that the PSM level, which is the sum of the attributes, is higher in the public than in the private sector. Lewis and Frank (2002) confirmed this presumption. For Perry (1996) PSM is as a dynamic attribute that changes over time and may change an individual's willingness to join and to stay with a public organisation.

### **2.4.1.3 Critical voices concerning Public Service Motivation**

Schott and Steen (2011) expressed doubts about Perry's theory (1996) that PSM is in public service organisations positively related to individual performance. They claimed that the underlying element of all definitions of PSM is serving the public good. It reflected the predominant assumption in literature that PSM affects behaviour that influences the performance of public servants. While behaviour and performance are not the same, a close relationship between the two concepts is assumed (Schott and Steen 2011).

Vandenabeele (2007) stated that the performance of certain PSM related behaviours depend on whether the institutions constrain opportunities for them. For Schott and Steen (2011), the expression of PSM behaviour has to be explained in the context of the environment. Furthermore, Eijk and Steen (2011) argued PSM did not directly influence behaviour and vice versa. Furthermore, Rutgers and Steen (2010) declared that difference between subscribing to a value, being motivated to realise that particular value, and acting out this value exist.

### **2.4.2 Public Service Motivation as a global phenomenon**

In recent years, the topic PSM has gained international attention (Rainey 2009). Vandenabeele and Van de Walle (2009) reported that aside from the studies conducted in the USA and Europe, similar concepts have also been introduced in Asia, China and Australia. Vandenabeele and Van der Walle (2009) analysed studies from all around the world to test whether there are differences in the PSM concept across nations and regions. Vandenabeele and Hondelghem (2005, p.4) concluded that

*“the existence of similar but not identical concepts to explain disinterested public behaviour, varying from one institutional environment to another, makes it very difficult to conduct macro-level comparative studies”.*

Rainey (2009) sees in these findings evidence for a universal character of PSM but only up to a certain extent. Particularly in the United Kingdom (Horton 2006) and Canada (Kim and Vandenabeele 2010) public servants are motivated by public ethos. In the Netherlands and Germany, public servants are motivated by a related concept that finds that public service values are embedded in the regime (Vandenabeele, Scheepers and Hondeghem 2006).

### **2.4.2.1 Boundary between Public Service Ethos and Public Service Motivation**

While the topic PSM has just become an interesting field of research lately (Rainey 2009), public service ethos (PSE) has a long history in literature, history and society (Horton 2009). In spite of this divergent history, many authors consider the terms PSM and PSE to be very similar, or to be almost interchangeable (Rayner *et al.* 2010), or at the very least, related to each other (Vandenabeele 2007).

The Public Administration Select Committee defines ethos as

*“a principled framework for action, something that describes the general character of an organisation, but which, and more importantly should also motivate those who belong to it”* (Needham 2006, p.846).

Pratchett and Wingfield (1996) support this theory and explain that ethos is not a description of individual behaviour but a set of norms creating logic of appropriateness for public servants. According to the OECD (1998, p.14) the term PSE is defined as the *“sum of ideals which define an overall culture in the public service”*. For Horton (2009, p.17), PSE consists of the

*“behavioural traits within the public servant act, loyalty to the organisation and its goals, accountability through and to political authorities and the law”*.

Ethical standards are derived from specific administration systems and when administrative systems change over the years, the ethical standards change, as well (Horton 2009). To be precise, service ethos mirrors *“fundamental values, beliefs, and ideals held by politicians, public servants and the public”* (Horton 2009, p.19).

In Germany, for example, civil servants have a special status, a sectorial closeness in the state system that is linked to a relation of duty to the state and the sovereign character of public tasks (Vandenabeele, Scheepers and Hondeghem 2006). The Weberian system attempted not only to achieve the creation of a rational, legal, predictable and transparent regime; it also wanted to ensure that civil servants have

the freedom to make their decisions (Eliassen and Sitter 2008). Weber claims that in return for a secure and lifelong career, civil servants accept and show loyalty to public service (Eliassen and Sitter 2008). A civil servant' ethos results from this status. For Horton (2006), it is clear that people working in the civil service identify or are identified with a public service ethos. Derlien (2008) stated that the esprit de corps especially among higher civil servants results from the function rather than the legal status.

Rayner *et al.* (2010) also acknowledge the similarity of the PSM and PSE concepts as both concepts are related to the special attraction of public sector work (Brewer and Selden 1998). Brewer and Selden (1998, p.416) see clear boundaries between PSE and PSM because PSM is an *"individual, not a sector-based concept"*. In contrast, PSE is a dynamic behavioural concept composed of the stereotypes of behaviour people show (Rainey 1982). PSM is based in the individual; PSE is a sector-based ethos (Rayner, Williams, Lawton and Allinson 2010). Furthermore, PSM is derived primarily from a motivation theory (Brewer, Selden and Facer II, 2000), while PSE has philosophical and theoretical roots (Rayner *et al.* 2010). While PSM is an important topic for investigations in the last decades and a lot of authors like Perry and Rainey attempt to measure PSM empirically, studies concerning PSE are rather rare (Rayner *et al.* 2010). In one of few studies, Rayner *et al.* (2010) show empirical evidence for the existence of PSE combined with the suggestion of continuing to do research in this field.

### **2.4.2.2 Impact of Public Service Motivation on personal commitment towards the organisation**

For Perry and Wise (1990), it is necessary to evaluate an understanding of the PSM contribution to organisational commitment and performance. Several studies have been done on the relationship between PSM and various outcome variables (Naff and Crum 1999). Perry and Wise (1990, p.370) portend that the

*"greater an individual's PSM, the more likely the individual will seek membership in a public organisation".*

This leads to the perception that when both value systems are congruent, individuals are attracted to this organisation; the organisation is interested in these individuals. If people are attracted to organisations and they are willing to stay, Schneider, Goldstein and Smith (1995) assume a fit between the individuals and the organisation. Steijn (2008) confirms the PSM fit concept in an international context and its significant effect

on vocational outcome variables. Individual fit concepts are the topic of the following section.

### **2.5 Derivation of objectives and hypotheses through literature gaps**

Out of the literature review several literature gaps on the aspect of readiness for change models appeared. The overarching gap is the missing of a measurement model for readiness for change in the German public sector. To fill this gap and to develop a measurement model, four research objectives and eight hypotheses which are the guiding principles running through the entire study were identified. Answering the objectives and the hypotheses led to the answer of the research aim and is the base for the study.

Research objectives help to shape and specifically focus the purpose of a study. For this reason, they are frequently used in social science research and are used here as well. Saunders, Lewis and Thornhill (2009, p.600) define research objectives as

*“clear, specific statements that identify what the researcher wishes to accomplish as a result of doing the research”.*

The hypotheses are derived from the research objectives. The hypotheses are predictions that the author makes about the expected relationships among defined variables and the outcome of a study (Murray and Beglar 2009). The overarching research aim is the development of a tool to measure readiness for change in the German public sector.

The first research objective and hypotheses were formulated based on the concept of readiness for change. In addition to the impact and level of changes, and the reaction towards change, a further topic in the management arena concerns the recipients of the change efforts. In this case, the recipients of the change efforts embrace the individuals in an organisation as well as the organisation itself. To improve the organisational change process, the individual employee should be prepared for change. Only if the individual is ready for change, organisational change interventions can be successful (Madsen, Miller and John 2005). A commonly cited cause of change failures is resistance to change. It is often seen as the main challenge to the power and authority of leaders (Senior and Swailes 2010). However, it is also a key concern of people who are involved in the change process as employees (Palmer, Dunford and Akin 2009). People resist in different ways varying from active acts of sabotage to passive acts of hesitation. Researchers emphasise the need to steer the energy of resistance towards the positive direction of readiness for change. Readiness for

change is a mediating variable between change management strategies and the outcomes of change. Getting the employees motivated to change is an important condition towards successful change efforts. Readiness for change can be described as a state of mind (Devos and Bouckennooghe 2006). Devos and Bouckennooghe (2006) state in their study that persons in this case public employees have a lower readiness for change than private employees. Furthermore, Michel, By and Burnes (2013) state that individuals with high levels of resistance to change are hyper-responsive in a negative way to events happening in their environment.

Up until now, there has not been paid any attention given in the literature to understanding the readiness for change level of civil servants in comparison to non-civil servants employed by the same public sector company. The focus of the study is the development of a measurement model for readiness for change in the German public sector by applying existing readiness for change models to the novel environment of public sector.

The following research objective and the hypotheses are the starting point for this study (Table 2.5):

**Table 2.5 Research objective and hypotheses concerning the concept readiness for change**

Research objective	Hypotheses	
To analyse and explore the relevant items of the existing concepts of readiness for change	1	General readiness for change is lower than the specific readiness.
	2	General and specific readiness for change of civil servants is significantly lower than the general and specific readiness for change of non-civil servants.

While one focus of Section 2.2 was the concept of readiness for change, a second focus was placed on the person-fit concepts.

The concept P-E fit is the umbrella concept of the fit concepts (Lauver and Kristof-Brown, Zimmermann and Johnson 2005). P-O fit represents the level of congruence and compatibility of an employee with the employer and the match between individuals and the organisational environment (Vigoda-Gadot and Meiri 2008). People and organisations are attracted to one another when the congruence between the employees' motives and the incentives given by the organisation is high (Steijn 2008). This congruence refers to work values like benefit, autonomy, team-work, fairness and loyalty. Those who fit better in the organisation have a higher commitment, higher job

satisfaction and are more motivated to provide services to the public (Vigoda-Gadot and Meiri 2008). P-J fit describes the fit of the abilities of a person and the demands of a job (Lauver and Kristof-Brown 2001). Researchers find a positive impact on the P-J fit when the desires of individual decision-making match the decision-making offered on the job. Furthermore, it is positively-related when the individual skills and abilities fit on what is demanded for the job (Lauver and Kristof-Brown 2001).

In order to serve the new needs of the market, changes in the behaviour of civil servants and non-civil servants are needed. The market calls for greater flexibility, better information flow, higher service quality and more customer orientation. To change the individuals who are public and civil servants it is required to adapt their existing values and individual mindset to new demands. The coupling of the readiness for change with the P-O fit or/and P-J fit is subject to the supposition that only if the individual feels comfortable in the organisation or job, will the change be successful.

As Vigoda and Cohen (2003) and later on Steijn (2008) emphasise, there is a lack of research concerning work environment fit in public sector organisations which will be investigated with the help of this study and leads to the next research objective and hypotheses of the study (Table 2.6):

**Table 2.6 Research objective and hypotheses concerning the concept Person-Environment fit**

Research objective	Hypotheses	
To analyse and explore the concept of Person-Environment fit and its sub concepts	3	Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on specific readiness for change than on general readiness for change.
	4	Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.

During the last decades, the call for change in the public sector by implementing a variety of improvements has been becoming louder and governments all over the world have been following this call (Devos and Bouckenoghe 2006). Nevertheless, most of the major studies concerning changes focus on the private sector (Coram and Burnes 2001). However, even the small amount of public sector-related research that has been done so far has reached the same conclusion: many large-scale change endeavours in the public sector around the globe have failed (Coram and Burnes 2001). Studies show that change managers in the private and public sector have the same level of capability, but the changes they face differ (Ferlie *et al.* 1997). The differences appear

in public accountability, demonstrating value for money and meeting the increasing expectations concerning service levels, quality and time (Coram and Burnes 2001).

While one focus of Section 2.2 was the concept of readiness for change, a second focus was placed on the person-fit concepts.

The concept P-E fit is the umbrella concept of the fit concepts (Lauver and Kristof-Brown, Zimmermann and Johnson 2005). P-O fit represents the level of congruence and compatibility of an employee with the employer and the match between individuals and the organisational environment (Vigoda-Gadot and Meiri 2008). People and organisations are attracted to one another when the congruence between the employees' motives and the incentives given by the organisation is high (Steijn 2008). This congruence refers to work values like benefit, autonomy, team-work, fairness and loyalty. Those who fit better in the organisation have a higher commitment, higher job satisfaction and are more motivated to provide services to the public (Vigoda-Gadot and Meiri 2008). P-J fit describes the fit of the abilities of a person and the demands of a job (Lauver and Kristof-Brown 2001). Researchers find a positive impact on the P-J fit when the desires of individual decision-making match the decision-making offered on the job. Furthermore, it is positively-related when the individual skills and abilities fit on what is demanded for the job (Lauver and Kristof-Brown 2001).

In order to serve the new needs of the market, changes in the behaviour of civil servants and non-civil servants are needed. The market calls for greater flexibility, better information flow, higher service quality and more customer orientation. To change the individuals who are public and civil servants it is required to adapt their existing values and individual mindset to new demands. The coupling of the readiness for change with the P-O fit or/and P-J fit is subject to the supposition that only if the individual feels comfortable in the organisation or job, will the change be successful.

The need for changes is especially urgent in the public sector and will be the focus of the next chapter. During the last decades, the call for change in the public sector by implementing a variety of improvements has been becoming louder and governments all over the world have been following this call (Devos and Bouckenoghe 2006). Nevertheless, most of the major studies concerning changes focus on the private sector (Coram and Burnes 2001). However, even the small amount of public sector-related research that has been done so far has reached the same conclusion: many large-scale change endeavours in the public sector around the globe have failed (Coram and Burnes 2001). Studies show that change managers in the private and public sector have the same level of capability, but the changes they face differ (Ferlie *et al.* 1997). The differences appear in public accountability, demonstrating value for



money and meeting the increasing expectations concerning service levels, quality and time (Coram and Burnes 2001).

Characterising the public sector, researchers have found that civil, public servants and non-civil servants have distinct attitudes towards changes at work, work motivation, values at work and the role of the employer (Wright 2001). Devos and Bouckennooghe (2006) also cite the low materialistic interest and opposed to other studies a lack of organisational commitment of civil servants and public servants. Juxtaposed to the low organisational commitment of civil servants and public servants might be a high level of job commitment implying a high P-J fit and a low P-O fit. Job motivation in the public sector results from of supportive working environment and a rule-based climate. The so-called PSM can be characterised as altruistic, female and highly-educated (Bright 2008). Civil servants and public servants show a stronger service ethic than non-civil servants (Buelens and Van den Broeck 2007).

According to several studies, civil and public servants tend by the majority to exhibit the following selected personal characteristics (Table 2.7):

**Table 2.7 Characteristics of civil servants concerning the concept Public Service Motivation**

<b>Characteristics</b>	<b>Authors</b>
Willingness to whistle-blow	Brewer and Selden (1998)
No harmful activities to public interest	Brewer and Selden (1998)
Ethical behaviour	Brewer and Selden (1998)
Female, highly educated, managers	Bright (2005)
Not monetarily oriented	Bright (2005)
No commitment to turnover	Bright (2007)
Contribution to society	Houston (2000)
Organisational commitment	Pandey, Wright and Moynihan (2008)
Job satisfaction	Park and Rainey (2008), Kim (2006)
Tolerant towards bureaucracy	Scott and Pandey (2005)

Aside from the characteristics of people who show a high PSM level, a variety of studies have examined the relationship between PSM and performance as well as behavioural oriented variables (Table 2.8).

**Table 2.8 Influencing factors on the concept Public Service Motivation**

Influencing factors	Authors
Relationship between PSM and daily behaviour	Andersen and Serritzlew (2009)
Relationship between PSM and whistle-blow	Brewer and Selden (1998)
Relationship between PSM, job security and public interest	Brewer and Selden (1998)
Relationship between PSM and on an organisational level	Kim (2006)
Relationship between PSM and individual performance directly	Leisink and Steijn (2009), Frank and Lewis (2004), Naff and Crum (1999)
Relationship between PSM and selecting the government as an employer of choice	Leisink and Steijn (2009), Frank and Lewis (2004), Naff and Crum (1999)
Relationship between PSM and thoughts about quitting working for the government	Naff and Crum (1999)

According to Perry (2000), Moynihan and Pandey (2007) and Bright (2008), a need for more empirical work to validate and test connection of PSM civil and public servants still remains. Bright (2008) states that the PSM field has fallen short of showing a connection between PSM and attitudes or behaviour like readiness for change of public servants. For German speaking countries, Hammerschmid, Meyer and Egger-Peitler (2009) also expressed regret at the lack of studies in the field of PSM-related studies. Hammerschmid, Meyer and Egger-Peitler (2009) demanded that PSM-related studies should be conducted in Germany. For this reason, the author presents the final research objectives and hypotheses which are the base of the thesis (Table 2.9):

**Table 2.9 Research objective and hypotheses concerning the concept Public Service Motivation**

Research objective	Hypotheses	
To analyse the concept of Public Service Motivation	5	Public Service Motivation of civil servants is significantly higher than the Public Service Motivation of non-civil servants.
	6	Public Service Motivation has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.

From the literature, the concept need for security seems to be of high importance for employees, especially for civil servants. Therefore, the relevance and influence of this concept will be analysed. Supported by the research e.g. of Salladarre, Hlaimi and Wolff (2011) and Clark and Postal-Vinay (2005), by empirical studies in the public

sector such as Zawojka (2008), the author added the concept of need for security to the research framework (Table 2.10).

**Table 2.10 Research objective and hypotheses concerning the concept need for security**

<b>Research objective</b>	<b>Hypotheses</b>	
To prove the concept need for security	7	Need for security is significantly higher of civil servants than of non-civil servants.
	8	Need for security has a significantly higher impact on specific readiness for change than on general readiness for change.

A variety of change and especially readiness for change models which might be of relevance for the newly to develop readiness for change model are presented in Chapter 2. The basis for the new instrument was laid, the existing model and their impact on change explained, the circumstances of the new model stated and therefore the theoretical and conceptual base for the study pictured.

## **2.6 Chapter summary**

The chapter embraced and explained the literature background of the study with a focus on the topic of readiness for change influenced by the sub concepts of the P-E umbrella fit concepts P-O fit and P-J fit, the concept PSM and the concept need for security. Relevant models and the latest research findings were described, compared and analysed. Out of the literature review, the author derived the research objectives and hypotheses of the study (Table 2.11):

Table 2.11 Overview research objectives and hypotheses

Research objectives	Hypotheses	
To analyse and explore the relevant items of the existing concepts of readiness for change	1	General readiness for change is lower than the specific readiness.
	2	General and specific readiness for change of civil servants is significantly lower than the general and specific readiness for change of non-civil servants.
To analyse the concept of Person-Environment fit and its sub concepts	3	Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on specific readiness for change than on general readiness for change.
	4	Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.
To analyse the concept of Public Service Motivation	5	Public Service Motivation of civil servants is significantly higher than the Public Service Motivation of non-civil servants.
	6	Public Service Motivation has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.
To examine the concept need for security	7	Need for security is significantly higher of civil servants than of non-civil servants.
	8	Need for security has a significantly higher impact on specific readiness for change than on general readiness for change.

With the help of Figure 2.2, an introduction to the detailed research framework as the foundation for the empirical study described in Chapter 3 is given. The framework presents an overview of the concept and its sub categories, which will be part of the new instrument to measure readiness for change:

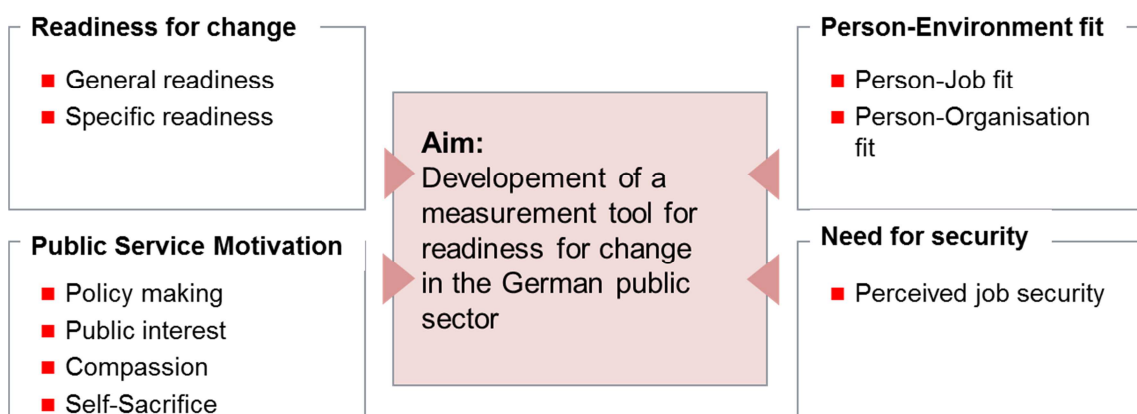


Figure 2.2 Detailed research framework with the concepts and sub concepts used for the study

### 3 Case study

Chapter 3 presents the case of the Deutsche Bahn Aktiengesellschaft which works as an example of privatisation as a tool of the New Public Management reform in Germany. It describes the development, the current situation and the outlook of the Deutsche Bahn Aktiengesellschaft. Furthermore, it puts a focus on the situation of the employment structure. The public sector in Germany has a long history concerning civil service. Due to the privatisation of a formerly state owned and now privatised company, the Deutsche Bahn AG faces the challenge of employing civil servants and non-civil servants in one company.

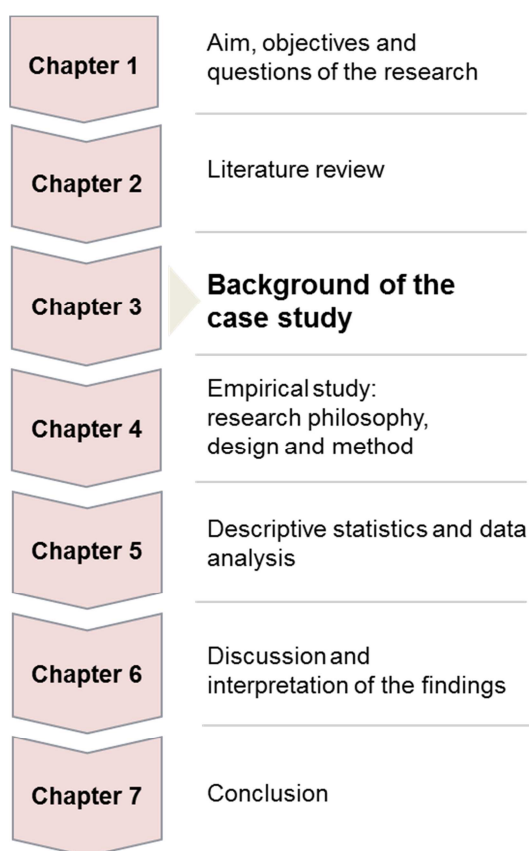


Figure 3.1 Research process: Chapter 3

#### 3.1 German railway reforms

In the context of the New Public Management tool privatisation in Germany, the DB AG played and plays a major role. The need to turn the publicly owned DB AG into a profitable privatised company was challenging for all stakeholders such as the Federal Government and the public as the owner and the civil servants and non-civil servants as employees.

The German railways were mostly built in the 19th century through a mixture of private and state investments. After the unification of Germany into a nation state in 1871, railways were an instrument of consolidation, military policy and a major contributor to state coffers. In 1879, the Federal States began to take over private railways. A wave of nationalisation of the railways took place in 1920s. In 1924, the national railway called the Reichsbahn was formed (OECD 2001).

After the WW II, in 1949, the German railways were returned to the Germans after four years of allied control. Those in the Soviet occupation zone continued to be run as the Deutsche Reichsbahn (DR), the name given to the German national railways in 1937. In Western Germany, DR was succeeded by the Deutsche Bundesbahn (DB). Both railways continued as separate entities in two parts of Germany (Bennemann 1994).

In 1949, the FRG founded DB as a special property (special-purpose vehicle of the German Federal Government called Federal Rail Property) which was controlled by the Federal Ministry of Transport. As the successor of DR, DB remained as a state-owned monopolist. The structure was the result of intensive discussion between the states and the Federal Government. The new German Constitution stated that the railway should be a part of the Federal Administration and therefore was not a legal entity itself. Moreover, as a Federal Rail Property, it was not a part of the department of the Federal Ministry of Transport either (Bennemann 1994).

The mission of DB has always been conflicting the need for profit maximisation versus the duty to serve the public. The special property and the Federal Ministry of Transport were installed to control the activities of DB. With the help of a state-appointed administrative board consisting of ministry employees, the state monitored the fulfilment of the political specifications (Sobania 2002). A board of directors was placed in charge of running the business and economic management. However, the board of directors needed the permission of the administration board for all business decisions like for example, increasing tariffs. However, the board had neither the obligation to be profitable or to cover the costs, nor the necessary freedom to pursue such goals (Berkelova 1992).

In contrast, the state-owned DR was part of the Ministry of Transport in the GDR. Following the system of a centrally planned economy, DR had to plan the necessary transport capacity on a monthly basis using a five-year-plan (Kopper 1999). The GDR was highly dependent on DR as a reliable means of transport. Nevertheless, DR suffered from economic constraints, bad political decisions and low investment (Aberle 2009). The infrastructure was also in poor shape due to a lack of investment only 17%

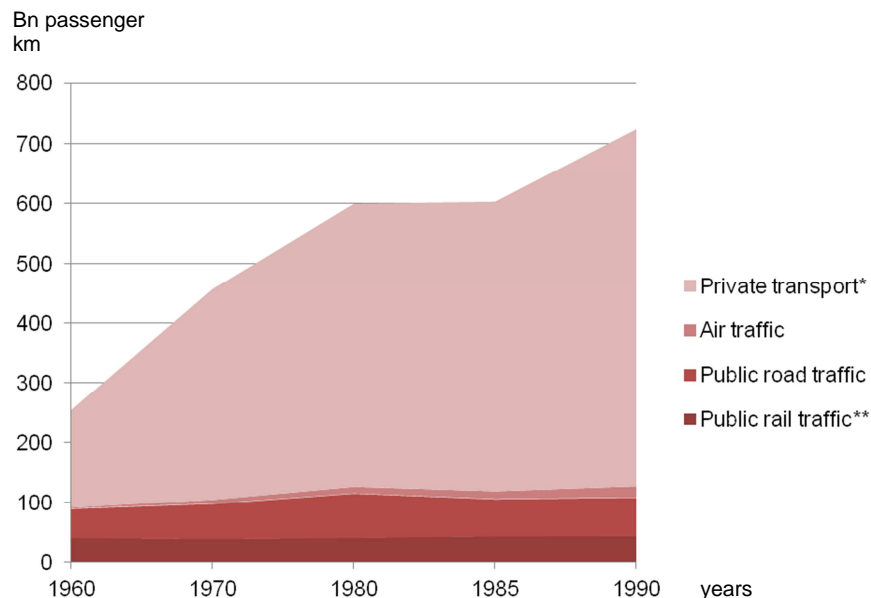
of the tracks had no speed restriction sections; many of the main railroad lines were single tracks and not electrified (Aberle 2009).

However, DR and DB did have one thing in common - both had to bear the costs of two world wars and to compensate for the damages to their financial power due to that (Bennemann 1994).

### Failed railway reforms up to 1994

Until the beginning of the 1990s, DB in Western Germany was protected from competition. In 1934, a law was passed to protect the rail by limiting long-distance coach routes to only a very few exceptions from and to West Berlin. Domestic airline services had to be allowed by the Ministry of Transport and road transport in the freight market was regulated so that market access was restricted and price floor regulation prevailed. A cabotage of foreign carriers was prohibited (Sobania 2002).

However, the efforts to protect rail traffic failed and the regulatory measures did not fulfil their purposes (Figure 3.2). In 1994, before the major railway reform took place, both DB and DR continuously lost market share in the growing transport market (Schneider 1996).



\* Traffic incl. passenger car, passenger van, moped, taxi and rental cars

\*\* Rail traffic incl. City-Train, since 1985 incl. City-Train in West-Berlin

**Figure 3.2 Traffic performance**

Source: Radke (2005)

Since 1960, it has been a political goal to improve the financial performance of DB, underlined by three reform proposals (Dengler 2003). The first in 1961 was the 'small traffic reform' and attempted to highlight the entrepreneurial goals of the company such as increase of profitability and decrease of costs (Berkelova 1992). In 1975, a development in the direction of concentrating on the most profitable parts of the network took place. However, the Federal States, the town councils and the union successfully stopped efforts to close down lines. In 1980, DB introduced a new accounting method, in order to identify the origins of deficits. Different cost centres like the public service obligations (short distance traffic), the infrastructure as a public obligation and the business units without subsidies (long distance traffic) were commercialised (Dengler 2003).

Despite the reforms and several cost cutting efforts, the deficit spending of the company kept on rising. The balance sheet of DB showed a deficit of between "£1.2 to 1.6bn (€1.5 to 2.0bn) in the time span from 1980 to 1992" and made it clear that DB required restructuring (Dengler 2003, p.160). The main reasons for underperformance were the strong influence of political interests and the very limited commercialisation of the business that resulted in a business situation characterised by high maintenance costs and low flexibility. For example, for all measures concerning investments, prices, product differentiation and personnel that DB wanted to implement, it had to ask the Federal Ministry of Transport for permission (Aberle 2009). With regard to human resource management, Public Service Law followed a sequential career plan. Each civil servant had to hold a position for a minimum length of time. In times of budget closure, the time span to the next promotion could be suspended. Therefore, a flexible handling of the work-force concerning the requirements and needs of DB was not possible (Panke 2005).

### **German railway reform (privatisation reform) in 1994**

Nevertheless, abolishing of the railway was out of question. The need for the railway was supported by many different reasons and a complete shift to other modes of transportation would be insufficient and costly (Häusler, Haase and Lange 1983). Furthermore, the railway was and still is one of the most environmentally friendly carriers (Bennemann 1994).

Different forces supported and strengthened the development and the implementation of another railway reform. As mentioned above, the desolate financial situation of the railways and the infrastructure is one reason for this impetus. However, another factor



can be attributed to the growing public awareness about topics like traffic congestion, energy waste, noise pollution etc. which led to a new sensibility to environmental issues (Panke 2005). The railway reform was accompanied by the German reunification which formally took place in 1990 (Bennemann 1994). Finally, the effort of the European Union to create more competition by liberalising the market led to the need for reforms in all European countries (Bennemann 1994).

In 1989, the Federal Government initiated the governmental commission on the railways which was comprised of representatives from the fields of politics, science and economics (Regierungskommission Bundesbahn 1991).

The different dimensions of the task force concerned themselves with environmental and traffic policy, regulatory policies, fiscal policies and product policies (BMVBW 2006). The environmental and traffic policies suggested a deflection of traffic towards the railway network and separation of state-sovereign and entrepreneurial responsibilities. The regulatory policies aim was to improve the competitiveness of the intermodal branch of the railway. The fiscal policies included the restriction of the financial burden, while the product policies embraced the creation of services and products that could sustain competition in the long run.

Without fundamental changes in the management of the railways, the Government Commission Railway predicted a deficit of £109.7bn (€136.0bn) by 2001 (Dürr 1994). As a result, the Government Commission Railway suggested the introduction of economically driven governance for this state-owned monopolist which included private capital, entrepreneurial governance and the clear distinction between politically and entrepreneurially driven activities (Regierungskommission Bundesbahn 1991). The Government Commission Railway required the merger of DB and DR and its transformation into a public limited company. This was combined with debt relief, an abolition of public service obligations in the transport sector and a regionalisation of local and regional transport. Even competitors should have open access to the rail network. Finally, a legal institution for the formal transfer of the civil servants to the private sector had to be established (Regierungskommission Bundesbahn 1991).

In 1991, based on the paper published by the Government Commission Railway, the Federal Government decided to initiate fundamental railway reforms that came into effect in 1994 (Loeschelder 1993). The reunification of the two German railways formed the largest rail system in Western Europe with 41,000 route kilometers compared to the second largest French system with 32,000 (OECD 2001).

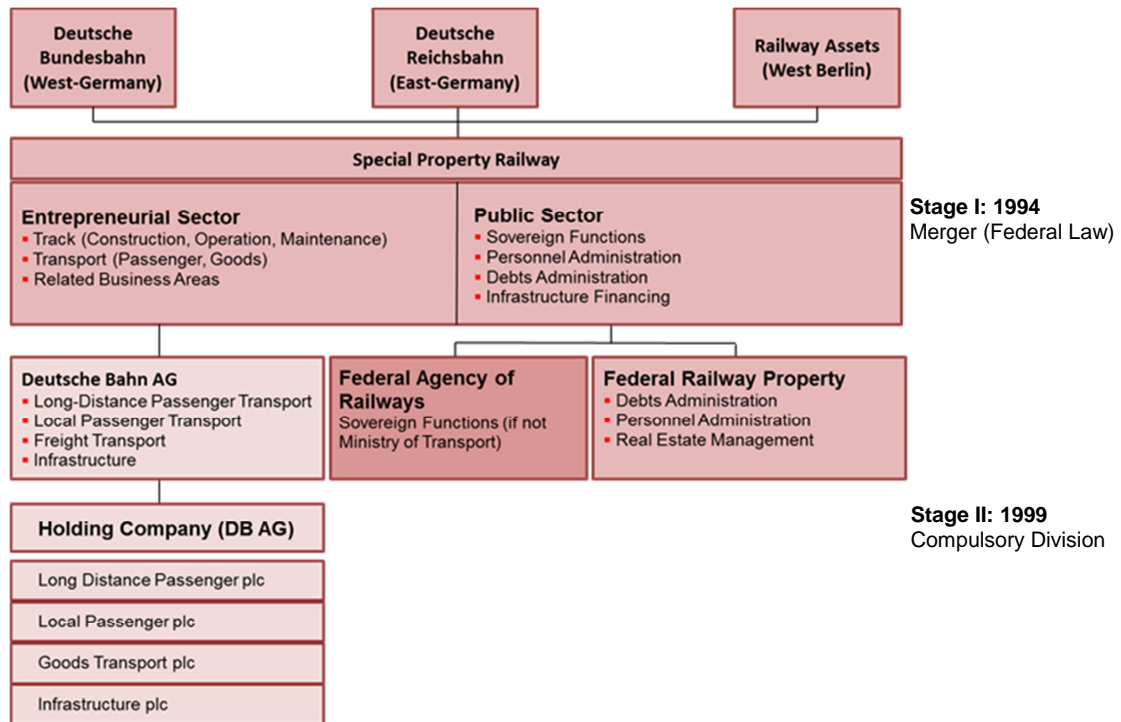
Because of these radical changes, a range of laws were set up or amended as a basis for the reform. The necessary changes in the Constitution were approved by a two-thirds majority in the lower house of the German Parliament and by the Federal Council of Germany in December 1993 (Fromm 1994). This decision was followed by the enactment of the Act on the Restructuring of the Railways (*Eisenbahnneuordnungsgesetz* ENeuOG). The ENeuOG consisted of the General Railway Law (*Allgemeine Eisenbahngesetz* AEG), the Deutsche Bahn Foundation Law (*Deutsche Bahn Gründungsgesetz* DBGrG) and the Act for the Unification and Reorganisation of the Federal Railways (*Gesetz zur Zusammenführung und Neugliederung der Bundeseisenbahnen* BENEuGlG) (Panke 2005).

The reform, which came into law on January 1, 1994, contained slight amendments to the reform suggestions from the Government Commission Railway and was divided into different steps. This had the two main goals of changing the modal split in favour of the railways and unburdening the public household (Schneider 1996).

Some selected measures of the railway reform are highly relevant for this thesis. Firstly, economical and organisational related measures had a strong impact on ownership issues. In accordance with ENeuOG Section 1 Paragraph 1, DB and DR were merged and were transformed into a special property. This special property was again according to BENEuGlG Section 3 Paragraph 1, immediately divided into an entrepreneurial and public part. The entrepreneurial sector, called DB AG is a private company in public ownership. The public part consists of the Federal Agency of the Railways (*Eisenbahnbundesamt* EBA) and the special property of the state (*Bundeseisenbahnvermögen* BEV). The EBA ensures non-discriminatory access to railway infrastructure and the BEV is the employer of the civil servants and responsible for handling pensions. It is a special property without legal capacity (Benz 1995). The BEV is part of the Federal Ministry of Transport, Building and Urban Development. The liabilities of £56.8bn (€70.0bn) coming from DR and DB were transferred to the Federal Rail Property (ENeuOG Section 1 Paragraph 3 Subparagraph 17).

DB AG started without any liabilities. In the first step, illustrated in Figure 3.3, DB AG was subdivided into four divisions: local and regional passenger transport, long distance passenger transport, freight transport and infrastructure. As regulated by the ENeuOG Section 1 Paragraph 2 and by following the second step of the reform, the four divisions were separated into five companies in January 1999 and subsumed under the roof of DB AG (Figure 3.3). Combined with the above-mentioned separation of the entrepreneurial and public sector, the abolition of public service obligations came along with these changes (AEG Section 15). Back then, DB AG was able to act as a

privately owned company (Aberle and Brenner 1996). Due to the financial reorganisation, DB AG was relieved from about “£32.9bn (€40.8bn) worth of debts in 1991” (Aberle 2009, p.139). Furthermore, the “assets of DB AG were depreciated from £42.7bn to £10.5bn (€51.8bn to €12.7bn)” (Aberle 2009, p.148).



**Figure 3.3 Stages towards the German Railway Transportation Act**

Source: BMVBW (2010)

Competition-related measures were introduced in addition to the restructuring of operational elements. Open access to the network for third parties was granted (AEG Section 14 Paragraphs 1-3). Additionally, the Federal States became responsible for the local and regional train services which were now called the local and regional transportation. Privately owned train-operating companies offer their services to the Federal States and get paid by the Federal States who in turn receive money from the Federal Government (ENeuOG Paragraph 4). The Federal Government municipalised the budget for the local and regional transportation.

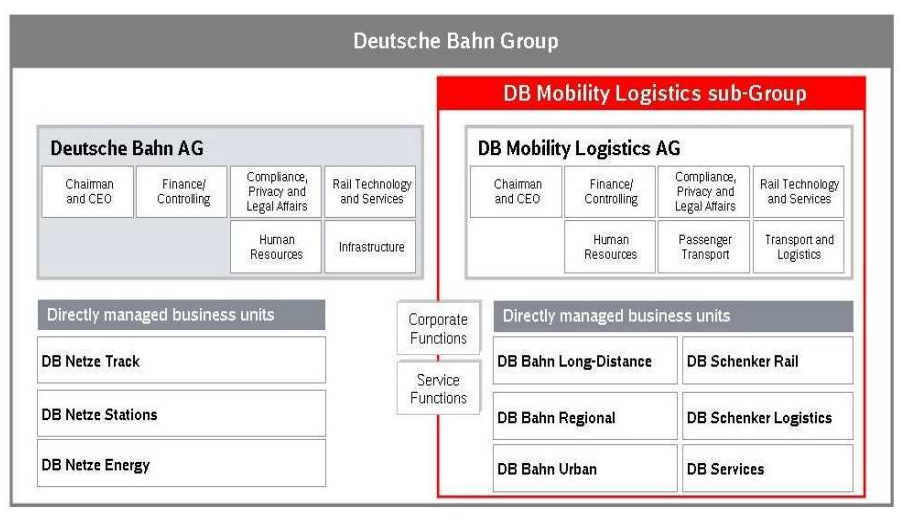
Personnel policy related measures are the transfer of approximately 400,000 non-civil servants and civil servants from DR and DB to the new DB AG (DBGrG combined with the German civil code Bürgerliches Gesetzbuch BGB Section 613a). The former DB, as a state-owned enterprise, was officially the highest authority with about 123,000 public and civil servants. According to the Basic Law Article 20 Section 2, DB AG, as a

privatised company was not allowed to employ civil servants. To solve the problem, the civil servants were transferred to Federal Rail Property (ENeuOG Article 1 Section 2 and Paragraph 3) as their new employer. DB AG then leased back the civil servants to support the workforce at market conditions (Graichen 1994).

### **3.2 Privatisation of the German railways and foundation of Deutsche Bahn Aktiengesellschaft**

DB AG was founded in 1994 and since then it has been a stock corporation incorporated under German law. As a government-owned railway company, it provides mobility, logistics and transport services (Datamonitor 2009a). DB AG is active in over 130 countries and is furthermore one of the world's leading passenger and logistics companies (Anon 2009b). In 2011, DB AG with 281,117 civil servants and non-civil servants worldwide generated revenue of £30.6bn (€37.9bn). The operating profit reached £0.12bn (€0.15bn). The core market is Germany with revenue of £18.1bn (€22.1bn) (DB AG 2012a).

The business portfolio contains nine different units (Figure 3.4): DB AG manages the track infrastructure (DB Netze Track), the passenger stations (DB Netze Station) and the energy supply (DB Energy) (Datamonitor 2009a). The remaining business units are bundled under the management of DB AG wholly-owned subsidiary DB Mobility Logistics Aktiengesellschaft (DB ML AG). These units belong to the group's passenger transport division which includes long distance transport (DB Bahn Long-Distance), regional transport (DB Bahn Regio), urban transport (DB Bahn Urban), rail freight (DB Schenker Rail, DB Schenker Logistics) and further services (DB Services which include DB Vehicle Maintenance, DB Systel, etc.) (Anon 2009a).



**Figure 3.4 Organisational structure of the Deutsche Bahn AG**

Source: Anon (2009b)

The duties of DB Netze Track (track infrastructure) include the installation, maintenance and operation of the complete rail track-related infrastructure in Germany. It markets the train-path usage, draws up timetables and maintains 34,000 km of track. The passenger stations segment operates and develops the passenger stations and retail facilities at the stations. DB Netze Energy (energy supply) is responsible for supplying all types of energy to DB AG, as well as other companies. It also offers specialised technical expertise and control instruments (Datamonitor 2009a). The long-distance segment, as a part of the passenger transport division, comprises all activities that are related to long-distance transport and other services in this field. Additionally, it offers services like car train travel (DB AutoZug) and night train transport (CityNightLine). Regional and urban transport provides a wide transport network that connects metropolitan areas to their surrounding regions by train and buses with a focus on the German market (Datamonitor 2009b). Another main business is the group's transportation and logistics division which includes Schenker and rail freight. Schenker is a logistic service provider offering global freight exchange and global air and sea freight. The rail freight segment comprises single freight car transport, block train transport and combined rail and road transportation (DB Mobility Logistics AG 2009).

### **3.3 Impact on the employment structure of the German railways as a public sector organisation**

Due to the history, the German railway as a public sector organisation employs civil servants, public servants and private employees.

#### **3.3.1 Employment in the public sector**

Statistics show that the public sector has an important role as employer in Germany (Dustmann and Van Soest 1997). Public sector employment in Germany has risen from 2.2m employees in 1950, to 4.6m in 1960 to 4.5m in 2009, peaking in 1992 after the German Reunification with 6.7m employees. Approximately 11% of the working population in Germany works in the public sector (Statistisches Bundesamt 2010). Since 1998, one in five employees is currently working for the public sector in Germany (Statistisches Bundesamt 2010). Although the German public sector is smaller in relation to its labour market share than public services in Scandinavian countries, France or Britain, it is for example larger than the U.S. public sector (Derlien 2000a).

The ratio of employment differs between these levels. In 2009, 11.7% of all public servants worked for the Federal Government, 50.2% for the Federal State and 38% for the local authority (Statistisches Bundesamt 2010).

Between 1950 and 1990, total employment in the public sector increased by 115% and has remained stable until today. Due to the rebuilding of the German army, the highest growth rate (38%) was seen during the 1950s and 1960s (Keller 1999). A second growth wave followed between the 1960s and 1970s resulting from the expansion of the welfare state and the enlargement of social, educational and medical services (Dustmann and Van Soest 1997). After the German reunification in 1990, around two million public servants from East Germany were added to the public sector system (Derlien 2000b). This short-term increase was followed by downsizing after the privatisation of Federal Public Enterprises in 1994 and 1995.

About 43% of public servants are civil servants, 68% of these belong to the Federal Government, 58% to the Federal State and 12% to the local level (Demmke 2005).

#### **3.3.2 Categories of employees in the public sector**

##### **Civil servants**

The German foundation of a professional civil service structure can be traced to the Prussian General Law which was passed in 1794. This was the first time that the duties

and rights of a king's servant were defined. Additional benefits such as a lifelong tenure in 1823 and the pension rights were added in 1825. The Prussian civil service code survived the revolution in 1848. Finally, the revolution in 1918 gave constitutional status to the rights of the king's servants (Derlien 2003).

In 1949, Article 33 codified the traditional privileges of public servants in the Basic Law of the newly found German Republic with the words

*“duties involving the continual exercise of official powers should generally be carried out by civil servants bound by public law to service and loyalty”.*

These civil service principles include several major features (Jann and Petersen 1998). For example, civil servants have a lifelong tenure, enjoy protection and support from the State with pensions and health care (which are paid out of taxes), and they receive compensation according to their social status and rank. Their status and salary are regulated by law and their appointment is made by an authoritative act and not by a contract. The salary is not considered as a payment but for services as a contribution to allow a living standard in relation to their rank. In contrast, the state expects strong loyalty to the constitution, political neutrality and law-abiding behaviour, both in official and private spheres. It is prohibited for civil servants to strike.

A central regulatory framework provides the basis of the German civil service. The Civil Service Framework Law regulates entrance, education and the labour conditions of Federal Government civil servants as well as for the state. This leads to the equality of all civil servants in the Federal State of Germany (Kuhlmann and Röber 2004).

The employment of civil servants is governed by this legislation, which includes the right to determine the legal status of civil servants according to Article 75 Paragraph 1 of the Basic Law, as part of general legislation and to make decisions relating to pay and pensions for civil servants according to Article 74a Paragraph 1 of the Basic Law, as part of concurrent legislation.

### **Career structure: The cadre system**

As a part of his concept of bureaucracy, Max Weber also took the professional training, the merit principle and the career system into consideration (Derlien 2008). The civil servants law provides a career system (cadre system) with four career groups that correspond to the hierarchy of educational institutions (Statistisches Bundesamt 2010): The highest level that can be reached is the administrative class. Presently, 23% of all civil servants are on this level: they are university educated, have completed a two-year preparatory course and they do not receive special training. The second highest level is

the executive class. Today, 53% of all civil servants follow this career path completing their A-levels (the German Abitur qualifies for university admission), then studying at an internal college for public administration for three years and graduate with a Bachelor of Public Administration. Below this level is the clerical class in which 23% of all civil servants work. Clerics are educated to the equivalent level of the British system of O-levels and have spent two years at a Federal Government or state-owned administrative school. The lowest level is the sub-clerical service and 1% of civil servants follow this career path. Sub clerics have completed secondary school and nowadays, they are mostly upgraded to the clerical class.

The career group system is strictly hierarchical with different job classifications and salary groups. Each of the four career groups consists of four grades which are reached through promotion. Promotion is achieved through a combination of length of service and individual performance (Bach 1999).

Recruitment is based on career provisions, which include the conditions concerning education and training for the individual careers. There is no central unit responsible for recruiting civil servants. Each ministry at the Federal Government, Federal State and local levels recruits its staff members itself. Applicants are chosen by their individual knowledge and abilities. Suitability for the specific job and not for a particular career path is necessary (Kuhlmann and Röber 2004).

For a long period of time, the duties and tasks of civil servants were linked to the authority of the state and could not be compared to non-civil servants in the private sector (Demmke 2005). Being a civil servant was and still is combined with specific expectations concerning behaviour. As representatives of the state, they should be neutral, incorruptible and exhibit good behaviour. The internal organisational structure of the institution public sector is linked to the public image of civil servants. The public sector is characterised by a hierarchical and formalised structure, clear career path, life time-tenure and seniority (Demmke 2005).

### **Areas of employment**

Civil service jobs are located in the public sector that is mostly dominated by authoritative acts like in the law and order branches (the police and revenue service). In these branches, leading positions must be staffed by career civil servants (Article 33 Section 4 of the Basic Law). At present 32% of all civil servants are employed in the area of school and university education, followed by general administration (13%) encompassing the core administrative unit including foreign and financial services. The



health sector is in the third place with 9.7% and law enforcement in fourth with 8.5% (Derlien 2003). The rest of the 100% is fragmented in several small fields of employment.

In many areas of the public sector both civil servants and non-civil servants are employed with a higher percentage of private employees. Only a few of sectors in Germany like the armed forces, the judiciary, the police and law enforcement, prison service, diplomatic sector, universities, financial authorities and the fire service have a majority of civil servants working there (Demmke 2005).

### **Pay structure**

The amount of pay that civil servants receive is laid down in laws and decrees. The Federal Parliament decides, with the help of a unilateral decision making process, on the salary and working conditions. In reality, pay increases are closely linked to the results of public servants' collective bargaining (Bach 1999). Pay structure is commonly based on a fixed salary scale and seniority and age are still important bases for pay increases in Germany (Willems, Janvier and Henderickx 2006). Every two years, the salary is increased on seniority (Jann and Petersen 1998). Germany has sixteen overlapping salary scales for civil servants. Civil servants do not have the right to strike or to engage in collective bargaining (Bach 1999). Benefits that civil servants receive are, for example, the pension which is about 75% of the final gross income. In terms of demographic development, the number of pensioners will increase disproportionally in the next few years (Bach 1999). Additional benefits include long term job security, training and a solid career.

### **Public servants**

The traditional principles of professional civil service only apply to civil servants and are not aimed at regulating the legal status of public servants. Public servants are considered private employees and are subject to private sector regulations. The dual employment structure of civil servants and public servants in the public sector is embedded in Germany's historical traditions (Kuhlmann and Röber 2004).

The Federal Government, Federal States and local authorities are responsible for public servants. In contrast, the public sector is not ruled by a specific Federal Ministry. The Federal Ministry of the Interior is only in charge of civil service related topics (Jann and Petersen 1998). About 60% of the people working in the public sector are public servants (Demmke 2005).

According to Röber (1996), the situation and role of public servants and wage earners can be characterised by similar duties to civil servants without specific disciplinary sanctions. Furthermore, pay and social security benefits are comparable with the private sector. For example, they can be laid off whereby public servants receive a job security comparable to the civil servants after 15 years working in the public sector. Recruitment takes place with limited pre-entry training and finally, the promotion system offers limited career prospects. In contrast to civil servants, private employees are allowed to strike and join unions.

### **Career structure**

Employment in the public sector is an advantage that civil servants have over public servants. Civil servants have better promotion prospects than their colleagues. In effect, while the civil servant is employed to climb the job ladder, the public servant has to fill the job vacancy (Jann and Petersen 1998).

### **Area of employment**

Public servants are commonly employed in social and health services, in research institutions and in clerical functions. Wage earners, as part of the public servant work force, carry out predominantly physical work, for instance in local waste disposal departments. However, the challenge is that public servants often work in jobs that imply authoritative acts and that, should actually be carried out by civil servants (Derlien 2003).

### **Pay structure**

The salary system is basically aligned with the career groups of civil servants. Each grade is linked to a fixed basic salary, a poor start in the beginning and a pay increase every two years (Bach 1999). Most of these conditions are set out in collective agreements negotiated between the Minister of the Interior, public employers (Federal Government/Federal State/local authorities) and the responsible trade unions.

### **Employees in the private sector (non-civil servants)**

In order to complete the variety of the employer-employee relationship, the employees in the private sector have to be mentioned. Basically, the work and work contract

conditions of the public servants apply for the employees in the private sector. As private employees, they are subject to the private sector regulations in terms of pay, social security and employment contract.

The focus of the study lies on the comparison of civil servants and non-civil servants working at the DB AG. Several times, the term 'employees' is used in the thesis, embracing all employees of a company who could be civil servants, non-civil servants and/or private sector employees. Exceptions of this definition are described in the context.

### **3.3.3 Implication on the employees of the German railways**

A strong need for changes in the workforce field arose from the increased labour costs. As exemplified by DB, since 1970, the income generated by the core business could not cover the personnel costs (Aberle 2009).

#### **Work force at the German railways before 1994**

The West German DB started in 1949 with a workforce of 539,000 of whom 45% were civil servants and 55% were non-civil servants. At that time, the workforce was aging and overstaffed which exacerbated the poor financial situation of DB. By the end of 1955, DB's debts reached £1.4bn (€1.7bn) (Kopper 2009).

DB tried to reduce the number of staff and in 1969, managed to decrease the number to 393,658 civil servants and non-civil servants (Dengler 2003). This tendency was interrupted from 1969 to 1974 by two main developments. Firstly, DB forced an expansive personal policy of approximately 22,000 new recruits between 1969 and 1974 due to a very positive forecast in rail traffic and inflexible, expensive personnel structures (Aberle 2009). Secondly, in 1974, the first railway worker strike took place and led to a wage increase of 11% (Kopper 1999). Generally speaking, in comparison to the other industries, the wage level was very high and this status lasted up until 1989. Among other things, this situation was caused by the civil service laws regulating career structures and income development. Additionally, the German Federal Court of auditors criticised the exorbitant incentive bonus, wrong wage classification of the staff and faulty planning of manpower requirements (Dengler 2003). On average, 60% of the workforce was civil servants and therefore another cost driver (Laaser 1991).

The German Federal Court of auditors claimed that about 68% of all costs (£8.155m/€9.927m) in 1980 and 61% of all costs (£8.834m/€10.754m) in 1990 resulted from labour costs (Berkelova 1992). The Federal Ministry for Transport initiated cost reduction measures and through this, personnel costs decreased between 1980 and 1990 (Aberle 2009). The development of the workforce is depicted in Table 3.1:

**Table 3.1 Average workforce of the Deutsche Bahn from 1970 to 1990**

Year	Average workforce
1975	394,903
1980	328,980
1985	283,356
1990	235,975

Source: Aberle (2009)

Concomitant with the establishment of *Deutsche Reichsbahn* (DR), the Eastern German railway after the WW II, the employees lost their civil servant status and all the privileges that came with it (Kopper 1999). In addition, DR suffered from a labour deficit that resulted from full employment in the GDR. Additionally working for DR was not very attractive because the jobs entailed long hours and poor payment. This bad situation started in 1960 and lasted until 1989, although the GDR took unsuccessful countermeasures, such as forcing women to work for DR (Preuss 2001). The combination of the labour deficit and the slow process of rationalisation increased overtime on a yearly base from 87 hours in 1965 to 164 hours in 1972 and led to a rise in the dissatisfaction among the work force (Kopper 1999).

### **Transition of civil servants from a public to a private company**

As an important part of the railway reform, the Government Commission Railway recommended pooling the workforce of DB and DR in one so called receiving company to cut down the debt level and to increase efficiency. From this company, DB AG would have the chance to choose the appropriate number and type of employees to implement a new start without any legacies (Regierungskommission Bundesbahn 1991).

The decision to transfer the civil servants and non-civil servants to the new privatised company DB AG concerned directly or indirectly approximately one million persons including pensioners and workers. Prior to the upcoming German election, the two

railway staffs were also considered to be potential voters which also influenced the decision-making process (Reinke 2001).

In the end, the government did not comply with the government commission's recommendations and decided to transfer the civil servants, non-civil servants and workers to the Federal Rail Property (Legel 2008). The non-civil servants were then immediately transferred to DB AG which received 88,403 workers and 8,144 public servants from DB and 173,617 workers from DR (Schneider 1996).

In May 1993, about six months before the railway reform came into effect, the unions initiated wage negotiations for the non-civil servants and workers. The aim was to reach an early commitment for the complete workforce. In December 1993, the parties agreed on a collective labour commitment. The former DR workers received 80% of the West German wages, which increased in 1995 to 84% and in 1998 to 86%. The salary of the West German co-workers remained almost the same. Today the salary level is equal (Reinke 2001). With this personnel policy, the idea of improving the profitability of the new DB AG reached a dead end (Schneider 1996).

As a privatised company, DB AG was not allowed to exercise government authority and to employ civil servants. To solve this problem, the Federal Rail Property as an authoritative arm of the government, was established and since then, functions as the highest official authority over the DB civil servants. However, the Federal Government is still the highest authority for civil servants at DB AG and all civil servants in Germany (Panke 2005). In January 1994, the Federal Rail Property acting as a buffer between DB AG and the market received exactly 129,685 civil servants from DB and leased them back to DB AG at market price (Bundeseisenbahnvermögen 2012).

The leasing back was divided in two ways. On the one hand, the civil servant is allocated to the Federal Rail Property by law (Benz 1995). The assigned civil servants get paid by the Federal Rail Property which receives the money from DB AG (ENeuOG Section 2 Paragraph 21). The amount of money that DB AG pays to the Federal Rail Property for the civil servants follows the classification of the union wages. The Federal Rail Property bears all additional cost resulting from the careers of the civil servants. The reason for this is that civil servants have a guaranteed protection of their vested rights (Munzert 2001). The civil servants could of course make an appeal to this process and quit the civil servants status, but this did not happen often due to the loss of the benefits such as job security and a high pension rate (GDBA 1994).

The other way of leasing back was for the Federal Rail Property to put the civil servants on furlough. In this case, a contract between DB AG and the Federal Rail Property puts

the civil servants in a position of non-civil servants who get paid by DB AG. The civil servant has a dual status as a civil servant on leave and a non-civil servant for DB AG (Anon 2014a). During this time, the civil servant has no service obligation resulting from the civil servant status. By the end of the leave of absence, the civil servant returns to the Federal Rail Property. The civil servants on leave are paid as non-civil servants, where they are still insured according to the Civil Service Benefits Act.

Today, every assigned civil servant can become a furloughed civil servant which could be highly attractive regarding wage conditions. The career of civil servants depends on the German career group system. In accordance with the attained level of education, civil servants start out at different levels in the career system and follow the standardised rules of a career in regards to age and length of service. With the help of the status 'leave of absence', the civil servant is able to be promoted in the same way as a non-civil servants and hence, the principles of the career system can be overridden (Anon 2014b).

With the dual status, the civil servants are formally treated equally with the non-civil servants and salaried workers. But in addition, the civil servants are still subject to the public service law (Anon 2014b).

### **Situation of civil servants at DB AG**

In January 1994, 129,685 civil servants (7,394 on parental leave) worked for DB AG (Bundeseisenbahnvermögen 2012). Today, the number of civil servants has further decreased to 45,190, of which 36,078 are assigned civil servants; 3,598 are civil servants on leave (furloughed civil servants); 1,104 civil servants are on parental leave and others are working part-time in place of older civil servants. About 11.7% of the civil servants are women. It is estimated that 10.4% (4,649) of the civil servants will retire in the next seven years (Bundeseisenbahnvermögen 2012).

In 1994, the possibility to become a civil servant at DB AG was stopped completely in accordance with the railway reform. Due to this fact, there is only one civil servant who is under 35 years of age (Öffentlicher Dienst 2009). The average age of civil servants DB AG is higher than the average age of DB AG. The average age is 52.4 years in comparison to the overall age average of 45.6 years at DB AG (Billerbeck 2011). In the future, the age average of civil servants will increase due to demographic changes in Germany and the recruitment freeze of civil-servants. About 3.5% (1,560) of the civil servants are at present between the ages of 36 and 40. The second largest group with

31.2% (13,963) is civil servants between 51 to 55 years. Currently, 35.3% (15,803) of all civil servants at DB AG are above the age of 56 years (Öffentlicher Dienst 2009).

In 2012, 0.6% (257) of the civil servants working at DB AG is in the administrative class which is the highest position a civil servant can reach in Germany. 16.8% (7,474) are working in the executive level and 82.2% (35,182) are working in the clerical. Furthermore, 0.5% (214) of the civil servants is employed in the sub-clerical level (Bundeseisenbahnvermögen 2012). The figures reflect the reality of the German employment structure in the public service in Germany today (Bundeseisenbahnvermögen 2012).

The qualifications that are needed for each of the above-mentioned careers are clearly defined by the Federal Law of Career for civil servants (*Bundeslaufbahnverordnung*, BLV Paragraph 7). A promotion to a higher career level is only possible when a civil servant meets the required qualifications or passes an assessment center review.

The personnel structures and resource planning in the German public sector is described by the so-called job cone. The job cone is officially called the establishment plan. It shows the positions of authority, the office or in this case, the employment structure for DB AG. The career and the salary level for all posts of the civil servants at DB AG are planned by the Federal Rail Property which is the responsible authority. The number of posts in each of the career levels differs and decreases from the bottom to the top forming a conical structure.

In order for a civil servant to be promoted at DB AG, a series of defined processes must be adhered to. If an assigned civil servant applies for a higher position at DB AG, the qualification, competence, performance and the limits of promotion are checked by the Federal Rail Property. Then, personnel representatives agree or disagree to the promotion set by the Federal Personnel Representation Law (*Bundespersönalversetzungsgesetz* BPersVG Paragraph 68). At the same time, DB AG checks the qualifications of the position the civil servant is seeking. Only when both DB AG and BEV agree on the promotion, the civil servant will receive it (Anon 2014a).

### **3.4 Success of the privatisation and future perspectives**

The aim of the railway reform was to increase the efficiency of DB AG in the future and to unburden the Federal Budget. The background for this was the poor financial situation of the two government-owned railways. The development of the total expenditure shows a steady governmental support of the whole railway industry in Germany of £15.6bn (€19.4bn) in average per year since 1994. By today, DB AG

receives about £7.3bn (€9.0bn) yearly from the Federal Government (Booz Allen Hamilton 2006). The Federal Government still supports DB AG with several payments which are in part, because of historical circumstances and in part, a result of inherited waste. The rail infrastructure managers of DB AG can dispose of £1.9bn (€2.5bn) per annum to make any necessary investments in infrastructure replacements to the existing network and this funding is provided by the Federal Government as part of the Performance and Financing Agreement. Additionally, the Federal Government invests £1.1bn (€1.4bn) annually for the construction and expansion of the rail network. Of this amount, £4.4bn (€5.5bn) flows into pension payments of state pensioners annually (Anon 2011a). Forecasts predict the total amount of pension payments by the Federal Government will amount to £87.8bn (€110.0 bn) by 2050 (Anon 2008).

On the other hand, a trend scenario created by the the Government Commission Railway shows a relief to the German budget of about £86.3bn (€108.0bn) since the railway reform (Booz Allen Hamilton 2006). Concerning the personnel costs, a privatised company like DB AG can promise a decreasing cost curve because of more flexibility concerning the amount of workforce and the labour costs (Laaser 1994). Additionally, DB AG was unburdened because of the transfer of all fiscal relicts generated by DB and DR to the Federal Rail Property. However, in an aggregate consideration, it was only a debt shift from DB AG to the tax payer. The financial burden resulting from the civil servant structure will last at least for the next 40 years (Laaser 1994).

### **3.5 Chapter summary**

The DB AG as the case study of the thesis is presented. The DB AG, the German railway, which underwent tremendous changes triggered by the NPM wave and manifested as a popular privatisation case in Germany.

The impact of the privatisation on the employment structure of the DB AG is fundamental. Simultaneously with the privatisation in 1994, the turning of employees to civil servants had been stopped. But, as a formerly state-owned company, a heterogeneous employment structure of civil servants and non-civil servants exist.

Discussions about the success of the privatisation of DB AG are still continuing (Scherp 2002). Forced by the European Commission to open the national railway markets for more competition and efficiency, the task force 'Future of the rail' was founded in 2001. Aside from making decisions as to how the situation will continue in the future, there have been no concrete changes so far. In 2008, the government forced the DB AG to



go public. Due to the worldwide financial crises, this project was not implemented. The result: DB AG has been privatised, but is still publicly owned.

## 4 Research process, research design and research methodology

It is the aim of this study to develop a model to measure readiness for change in the German public sector. It supports the attempt to analyse the readiness for change level of public sector workers and especially of civil servants in Germany and the influence of the concepts P-E fit, PSM and need for security. The empirical study was conducted with the civil servants and non-civil servants of the headquarters of the German railway, called DB AG. Out of the formulated aim in Chapter 1, the research objectives have been extrapolated:

- To analyse and explore the relevant items of the existing concepts of readiness for change with a focus on the public sector
- To analyse and explore the concept of Person-Environment fit (P-E fit) and the sub concepts
- To analyse the concept of Public Service Motivation (PSM)
- To examine the concept need for security

### 4.1 Introduction

Before addressing the research aim, the research objectives and the hypotheses, the process design will be provided in this chapter (Figure 4.1).

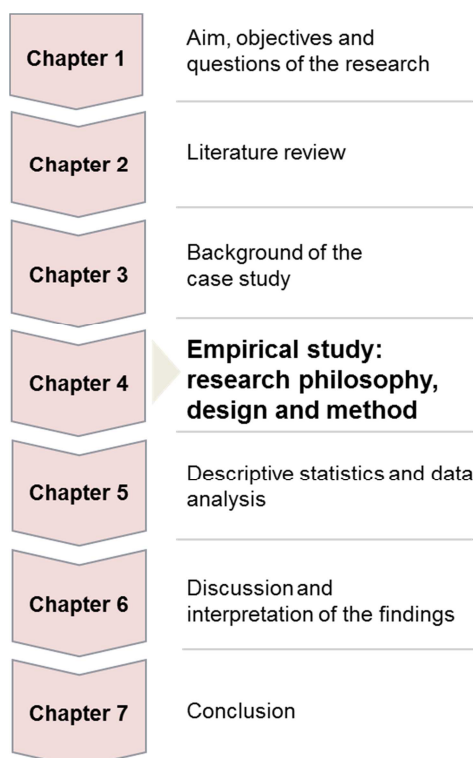
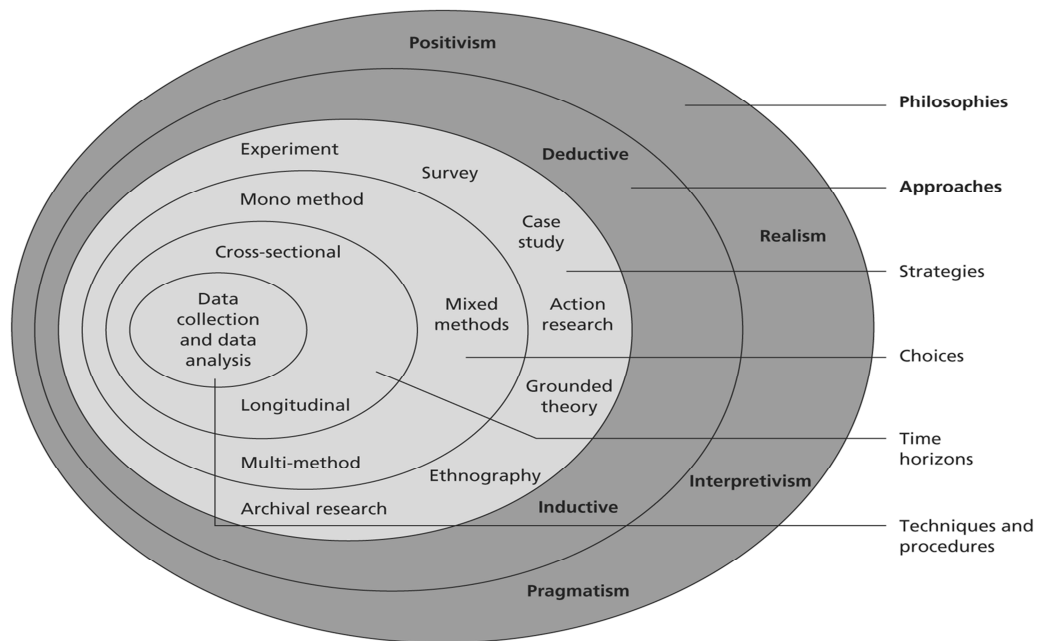


Figure 4.1 Research process: Chapter 4

## 4.2 Research process

The purpose of this section is to present the path of research also called the research process. As a basis for the development of the research process, the 'research onion' of Saunders, Lewis and Thornhill (2009) is presented and implemented. The 'research onion', as its name implies, has a variety of layers (Figure 4.2).



**Figure 4.2 Research onion**

Source: Saunders, Lewis and Thornhill (2009)

The outer layer presents the research philosophies. The philosophy of this study will be discussed in context of several existing philosophies. The next layer expounds the research approach followed by the research strategy including the adopted research design and the research instruments utilised in the pursuit of the research objectives and hypotheses.

### 4.2.1 Research philosophy

Every study follows a philosophical concept - the research philosophy. The philosophy can be described as a *“basic belief system or worldview that guides the investigator”* in their research (Guba and Lincoln 2010, p.105). To personify a philosophy as a researcher is a core issue for researchers because it determines the framework of the research (Sobh and Perry 2006). The personal philosophy of the researcher is the

## Research process, research design and research methodology

rationale for any research project (Crossan 2003). It also influences how the research is undertaken, starting from the design to the conclusion. There are two major ways or strategies of thinking about research philosophy: ontology and epistemology (Saunders, Lewis and Thornhill 2009).

Ontology as a branch of philosophy is defined as the 'science or study of being' or put more simply, "*what is the nature of social reality*". Ontology comes from Greek and stands for "*ontos*" which means being and "*logos*" (theory of knowledge) (Blaikie 2007, p.13). This describes the philosophical view on the nature of reality: the objective reality that exists and the subjective reality that is created in someone's mind (Blaikie 2007). Objectivism as one direction and branch of ontology asserts "*that social phenomenon and their meanings have an existence that is independent of social actors*" (Bryman and Bell 2007, p.22).

Interpretivism or constructivism is another approach, whereby reality is 'constructed' and not an eternally valid truth. Reality is seen as a social construction (social constructivism) (Sobh and Perry 2006). Science aims to understand how the individual perceives reality. This might be relevant for the understanding and interpretation of the P-E fit concepts or the individual need of (job) security. Therefore, it is necessary that the researcher is able to adopt an empathetic stance to understand the world from other points of views (Saunders, Lewis and Thornhill 2009). It is imperative that the researcher interprets the observed behaviour in order to understand the research subject. However, as the deep involvement of the researcher through the tool of interpretation might lead to a bias, the use of self-reflection is recommended (Saunders, Lewis and Thornhill 2009).

Due to this fact, the epistemological approach was chosen as a means of breaching this bias. The relationship between the reality described above and the researcher is epistemological (Sobh and Perry 2006). According to Blaikie (2007, p.18), epistemology is the "*theory or science of the method or grounds of knowledge*". It is a set of assumptions about the ways in which it is possible to gain knowledge of reality, i.e. the theory of how and what can be known. The word's origin is also Greek and it stands for "*episteme*" knowledge and "*logos*" theory of knowledge (Gill, Johnson and Clark 2010, p.191).

There are several main epistemological positions which afford researchers different perspectives from which to study phenomena (Saunders, Lewis and Thornhill 2009). The major positions are called realism and positivism. The discussion about epistemology is closely linked to the philosophical ideas of relativism (Easterby-Smith, Thorpe and Jackson 2008). In short, for realists, the world is concrete and science is

## Research process, research design and research methodology

progression gained through observation. Realism implies that real structures exist, independent of human consciousness. Realists tend to believe that whatever is known now is only an approximation of reality and every new observation brings the researcher closer to an understanding of reality (Blackburn 2005). The knowledge is socially created and a result of social conditioning (Sobh and Perry 2006). It is impossible to understand reality without social actors as a part of the knowledge derivation process (Saunders, Lewis and Thornhill 2009). Direct realists accept what they see as the reality, critical realists think that what can be seen is an image of the real world and is consequently in flux (Saunders, Lewis and Thornhill 2009). Realism differs in the way to accept and see the reality. This concept posits that a *“scientist’s conceptualisation is simply a way of knowing that reality”* (Bryman and Bell 2007, p.18). Furthermore, *“realists accept theoretical terms that are not directly amenable to observation”* (Bryman and Bell 2007, p.18).

Positivism is another major philosophy which falls into the category of epistemology. For this thesis, the positivistic position has been adopted. Positivist research is derived from natural sciences and displays the researchers’ understanding of nature (Saunders, Lewis and Thornhill 2009). The positivist believes in empiricism and observation, and measurement is the core of scientific inquiry (Sobh and Perry 2006). In accordance with Easterby-Smith, Thorpe and Jackson (2008), the basic approach of a study with a positivistic background is the aim to gather content salient to the research aim. As a positivist, the author of this thesis attempts to build knowledge of a reality that exists beyond the human mind. The basis of this knowledge is the objective, independent reality experienced by the social actors, that are in this case the civil servants and non-civil servants who were interviewed. The results of this research with a positivistic stance can then be extrapolated and applied to a larger context. The positivist understands a reality as the reality (Bryman and Bell 2007).

Positivism is similar to realism in the way of data collection and explanation, as well as in the commitment to the idea that an external reality exists (Bryman and Bell 2007).

Part of the study entails the aim to gain knowledge for identifying causal explanations for the behaviour of civil servants. The author has the intention to focus on facts and to look for causalities for the answers. As a positivist, the researcher expects a one-to-one mapping between the research statement and the reality at hand. The data collected measures the reality and this data reliable due to the fact they can be replicated. The overall aim is to reduce the research problem readiness for change in the public sector to selected drivers such as P-E fit, PSM and need for security. The

## **Research process, research design and research methodology**

results of the study provide data for the development of 'laws of human nature' (Easterby-Smith, Thorpe and Jackson 2008).

Critics maintain that a shortcoming of the positivistic approach is that it is generally equated with quantitative research and carries no explicit theoretical or philosophical commitments (Crossan 2003). The use of the approach is doubted in the context of human behaviour, because human beings are not objects and are influenced by feelings, perceptions and attitudes (Crossan 2003). Positivism is further criticised because it neglects the influence an individual has on his or her environment, actions, etc. and is hence, only a superficial view of the phenomenon it investigates (Moccia 1988; Playle 1995). This astute criticism is taken into account in this study and feelings and emotions are documented by direct interview and not only by observations of behaviour in the field. Due to the large sample and the aim to generate first of all, a general answer to the stated questions of 'Do differences concerning the readiness for change level influenced by the P-E fit, the PSM and the need for security exist?' the positivistic approach is a valid choice. The shortcomings of inflexibility, artificiality, and the lack of understanding processes have been taken into account by the author in the way of interpretation the data results. Positivism typically deals with causes without meaning, explanation without interpretation (Collier 2009).

A side discussion is on-going concerning research activities in the field of public administration. Positivist research studies claim positivism as the only appropriate research philosophy in the public sector (Houston and Delevan 1990). So far, the only way to conduct valid research was the observation of human behaviour in a positivistic manner (McNabb 2008). In 1993, Bartels and Brady (1993) examined more than 2,000 articles on the topic of public and non-public research and discovered that only the positivistic approach employing quantitative methods were used. Even seven years later in the year 2000, when Lan and Anders (2000) reviewed 634 articles concerning public management, the emphasis still lay on empirical and positivist research.

Today, the attitude towards the use of one particular research philosophy has changed. The majority of researchers agree that there is no single method that must be used. Denscombe (2010) notices a growing tendency to combine and use different methods within the same study. Research in the public sector is open to all kinds of research methods as long as the results make a valid contribution to research (McNabb 2008).

Despite of these trends and findings, the positivistic research process was chosen for this study: starting with the formulation of the research aim, the research objectives and the hypotheses to demonstrate by deduction, the validity of the study.

### **4.2.2 Research ethics**

The research ethics or better called the axiology ('axos' is Greek and means value and worth, 'logos' is derived from study, quote, story) is the philosophical study of value (Hart 1971). While the traditional research approach can be described as neutral, autonomous, unadulterated, and unbiased, it is in fact, laden and biased (Mertens and Ginsberg 2009). According to Klenke (2008, p.17), research is influenced by

*“values arrived from predisposition allegiances and predisposition towards disciplinary-related methodologies ... as well as the personal history and research experience of the investigator”.*

Concerning the study, the values come from different sides: the company, where the study takes place included the research subjects, the author herself and the topic. The research was conducted in Germany, in a typical German company with a long history tracing back to 1949, or perhaps even farther back to when the first train service in Germany started in 1835. Working for the DB AG was in former times a form of 'religion'. The identification with the company was very high and employees proudly said, 'I am a railway worker' (Preuss 2001). With the civil servant status came the special duty of serving which goes beyond the mere economic self-interest of the salaried worker because the civil servant must carry out official duties that only the state may legally provide (Zeilinger 2003).

The author is German and was brought up in Germany. Her upbringing reflects a value-conservative position that is representative of typical German values. She holds a Master's Degree in Business Administration and has work experience in this field from the employment at a variety of companies including Daimler AG (automotive company), TUI AG (tourism company) and debitel AG (mobile net provider). Currently, the author is working full-time at the DB AG as the head of the marketing department. The motivation for this research stems from a project with the central topic of 'how to lower the cost of the stationary point of sale with civil servants as part of the workforce?' A self-assessment in a management development context reflects the similarity of values held by the author and the company DB AG: both are value-based and analytical. The topic looks deeply into the value system of the participants in a work environment context. This dimension also influences the study and the results.

Even as a positivistic researcher, the author is aware that her values might have an influence on the entire research process from the choice of problem, guiding paradigm, rhetorical framework, data-gathering method, analysis strategy and the presentation format of findings.

#### **4.2.3 Research approach**

Besides the research philosophy, the research approaches are relevant for the design of the study. The research approaches are linked to the research philosophies (Saunders, Lewis and Thornhill 2009).

The first approach is induction which is a study in which the theory is

*“developed from the observation of empirical reality; thus general inferences are induced from particular instances”* (Hussey and Hussey 1997, p.13).

Out of the observation or the interview data, the researcher formulates a theory - which is juxtaposed to deductive approach. Here, the researcher is part of the research process (Saunders, Lewis and Thornhill 2009).

Hussey and Hussey (1997, p.19) define the second approach, the deductive research method as

*“a study in which a conceptual and theoretical structure is developed which is then tested by empirical observation; thus particular instances are deducted from general influences”.*

Deductive arguments are attempts to show that a conclusion follows a set of hypotheses. As the main research approach in the natural sciences, it follows these sequences: develop potential relationships of variables, describe hypotheses, test them and examine the outcomes (Saunders, Lewis and Thornhill 2009).

The deductive logical approach has been chosen for this study in order to develop statements that can be tested. The concepts in this thesis, such as readiness for change in the public sector, P-E fit, PSM and need for security are derived from the literature and are based on existing theories and research. The proposed research objectives and hypotheses require a deductive approach to determine the underlying constructs.

#### **4.3 Research design**

According to Saunders, Lewis and Thornhill (2009) and their ‘research onion’, the research design is a formal plan of action for a research project. The research design helps the author to map out the research strategy, the research choices and the time horizon of the research project (Saunders, Lewis and Thornhill 2009). In the following, the research strategy used in this study on the DB AG will be closely examined.



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Part of the research design is the definition of purpose of the proposed research. McNabb (2008) describes three ways of collecting data: exploratory, descriptive and causal. The exploratory design is used in small-sample studies set up to collect data about research problems and information associated with the problems (McNabb 2008). The key question here is “*what is happening?*” (Saunders, Lewis and Thornhill 2009, p.139). Ways to find the answers are doing literature research, interviewing experts or using focus groups (McNabb 2008). The objective of exploratory research is to gather preliminary information that will help define problems and suggest hypotheses (Kotler *et al.* 2008).

Descriptive research (statistical research) describes data and characteristics about the population or phenomenon being studied. Descriptive research answers the questions: of who, what, where, when, why and how (McNabb 2008). Even if the data description is accurate and systematic, the research cannot describe what caused a situation. Descriptive research cannot be used to create a causal relationship where one variable affects another. The description is used for frequencies, means and other statistical calculations. Research methods are face-to-face interviews as a kind of field survey and mathematical models (McNabb 2008).

Causal research, also explained as explanatory (Saunders, Lewis and Thornhill 2009), is used to explore the cause and effect relationships and the question asked “*what leads to what?*” (Kotler *et al.* 2008, p.333). The causal research method has been chosen as an approach for this thesis because the aim here is to determine how the variables concerning the topic readiness for change coincide with other variables and if the variances form any type of pattern. It is the aim here to measure the relationship between independent and dependent variables. In order to determine causality, it is important to hold the variable that is assumed to cause the change constant, and then measure the changes in the other variable. It is a complex research method which requires designing and conducting experiments (McNabb 2008). Causal research is a very common research strategy in studies on public administration and it can be conducted as an experiment or a laboratory experiment and simulation (McNabb 2008). However, a movement from the causal research to question why phenomena happen is also recognisable in research on public administration (McNabb 2008).

### **4.3.1 Research strategy**

There are many different research strategies such as experiment, survey, action research, grounded theory, ethnography, archival research and case study (Saunders,

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Lewis and Thornhill 2009). Research strategies that are linked to positivism and the deductive research approach were chosen for this study, in form of a survey strategy.

For this study, the case study approach has been employed. In this approach, both descriptive and explanatory case studies can be investigated. Explanatory case studies explore causation in order to find underlying principles, whereas descriptive case studies describe the existing phenomenon (Yin 2012). The case study strategy is

*“a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence”* (Robson 2007, p.178).

The particular phenomenon is the readiness for change by civil servants and non-civil servants in an embedded surrounding, i.e. one company. The study of this case is a good instrument to gain information and to analyse a phenomenon that has not yet been considered (Yin 2012). In this study, a single study is used because aside from the Deutsche Lufthansa and Deutsche Post, the DB AG is one of few companies that employ both civil servants and non-civil servants.

The study of this thesis presents the headquarters of the DB AG, the German railway (for details see 3.2). The German railways in East and West Germany suffered a decline in their performance from the 1950s to the beginning of the 1990s (Schneider 1996). After all sixteen reform measures failed, a major step was taken in 1994 with the foundation of the DB AG (Fromm 1994). This reform was accompanied by a discussion process between industry representatives and politicians, as the railway sector has always been heavily regulated. When the reform was implemented in 1994, an amendment to the Basic Law was needed, which required 130 changes of the laws and regulations concerning the involvement of different government levels and politicians from all parties and interest groups (Panke 2005). This decision was made to bring long-lasting relief to the German rail sector. However, many problems remained.

### **4.3.2 Research choices**

Part of the research choice is the discussion about using quantitative or qualitative research (Bryman and Bell 2007).

Quantitative research is often a research method in a positivistic approach and is predominantly used to generate and apply numeric data (Saunders, Lewis and Thornhill 2009). The data appears as counts or as more complex data such as test scores or prices. In order to be applied, this data must be analysed and interpreted (Saunders, Lewis and Thornhill 2009). The analysis of the numeric-data is mostly

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supported by software. For this study, the software Statistical Product and Service Solutions (SPSS) was used. Quantitative research has been the major instrument in social research because it delivers clear results (Murray and Beglar 2009).

Qualitative research is rather linked to interpretive research studies (McNabb 2008). Qualitative research is a term for a way of collecting data that mostly produces or uses non-numerical data (Saunders, Lewis and Thornhill 2009). The data can be words, pictures, etc. and is gathered to generate information about attitudes, behaviours, value systems, concerns, motivations and aspirations (McNabb 2008). Qualitative research begins by accepting that there are many different ways of understanding and making sense of the world. The aim is to understand behaviour as evidenced by questions such as 'what do they think about the world?'

In contrast, mixed method research is a combination of quantitative and qualitative research (Murray and Beglar 2009). It is attractive to use the mixed method approach because it allows combining the advantages of both research instruments. Its advocates argue that the mixed method approach thus provides a better and deeper understanding of the results (Murray and Beglar 2009).

Concerning the question of using a qualitative or quantitative research method, past examples may also be considered. Back in the 1990s, positivists argued that quantitative research was the best approach for studies in the public sector due to the fact that it could generate valid data with a high number of responses for further research (Houston and Delevan 1990). Nowadays, most researchers in the public sector agree that qualitative and quantitative models can be used. The quantitative research strategy has been chosen for collecting primary data because the study follows *"the view that all true knowledge is scientific"* (Bullock and Trombley 2000, p.669). Here, the typically positivist strategy, which involves sample research and quantified data calling for mathematical statistical analysis, has been followed. Furthermore, the study set out to test developed, pre-existing and in this particular study, already stated hypothesis in a value-free way. It is the aim of the study to detect underlying regularities and to generalise through statistical probability and significance.

### **4.3.3 Time horizons and credibility**

There were two options to be considered when a time range for this study was set up, the longitudinal and cross-sectional approach.

Studies with a longitudinal approach are repeated with a fix set of samples and variables over several time intervals (McNabb 2008). This approach is used to discover

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changes over a period of time. The types of longitudinal studies embrace cohorts (group of people with the same characteristic(s) observed over a selected time period) and panel studies (group of people compiled by cross-section selection and interviewed in regular intervals) (Bryman and Bell 2007).

The cross-sectional (also called snapshot) study is a “*one-shot assessment of a sample of respondents*” (McNabb 2008, p.97). Cross-sectional studies utilise different groups of people who share characteristics such as socio-economic status, educational background and ethnicity and try to observe and understand phenomena at a specific point in time. According to Easterby-Smith, Thorpe and Jackson (2008), cross-sectional studies usually fall back on survey research designs. The decision was made to conduct a cross-sectional study because of the aim for this research to collect data about a number of variables concerning readiness for change at a single point in time.

A longitudinal study could be also interesting in this case. Over a span of time, the perceptions of individuals are subject to change. A longitudinal study could reveal this development and detect changes in the perception of readiness for change. At present, it is not possible to conduct a longitudinal study, as DB AG does not allow it.

### **Credibility**

Questions arise in connection with the time horizons concerning reliability, replicability and validity of the study. They are highly important for the evaluation of the research and it was a priority to ensure the reliability of the study, which stands for the repeatability of the study. Reliability requires that the “*measures yield the same results on other occasions*” (Easterby-Smith, Thorpe and Jackson 2008, p.109). This is especially an issue for qualitative research and concerns about whether the measurement is stable. Saunders, Lewis and Thornhill (2009) list four biases and errors which might appear such as: subject and participant error, subject and participant bias, and observer error or observer bias. Nevertheless, a chance of error cannot be completely avoided. The observer error is not a problem because a standardised online survey is used. The observer bias will be reduced by a carefully designed questionnaire and pre-test of the questionnaire.

The term replication stands for the repetition of the research results (Bryman and Bell 2007). The replicability of the research is assured through a detailed description of the research procedures, such as the selection of the respondents, design of the measurement concept, and administration of the research instrument and the analysis

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of the data. By using a cross-selection approach, a detailed explanation of the research design, method and technique is inherent in the approach itself.

As a positivistic researcher, the intention in this study is to present a concrete reality with the help of the study. Validity questions are “*whether the findings are really about what they appear to be?*” stated by Saunders, Lewis and Thornhill (2009, p.157). Positivistic design indicates the need to conduct items for the quantitative research which are “*sufficiently accurate and stable*” (Easterby-Smith, Thorpe and Jackson 2008, p.92). Several types of validities exist: content validity (measurement reflects the content of the concept), construct validity (measurement of the construct intended to measure), concurrent validity (ability to predict behaviour) and predictive validity (ability to make accurate prediction of events in the future) (Boslaugh 2012).

Both reliability and validity are of high importance for each study. To secure reliability and validity before conducting the study, the measurement models used for the study are proofed by the calculation of the Cronbach’s alpha (reliability) and the mention by other authors in the literature (validity). An assessment of the validity is added to each model used in the study and described in Section 4.4.5. After the study was conducted, the reliability is calculated by the use of Cronbach’s alpha. The evaluation of reliability is mentioned in Section 5.2.

### **4.4 Research methodology**

The description of the research method includes the sample design, research process and techniques as well as the data collection and data analysis. The research method displays the inner layer of the research ‘onion’ of Saunders, Lewis and Thornhill (2009).

#### **4.4.1 Participants and context of change**

This study was conducted at the headquarters of the DB AG. The DB AG is divided into several core businesses: the passenger transport division, transport and logistics division and infrastructure and services division. The passenger transport division encompasses DB Bahn Long Distance, DB Bahn Regional, DB Bahn Urban and the DB Sales Organisation. DB AG ranks second in passenger transport in Europe, first in local public transport in Europe and first in local bus transport in Europe (DB AG 2012b). The division runs its trains and busses all over Europe and transports over ten million passengers daily (DB AG 2012a). It generates a revenue of £12.7bn (€15.8bn) with 91,313 civil servants and non-civil servants in 2011 (DB AG 2012a).

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Civil servants are represented in all business sectors at DB AG. Due to the constraints imposed by the works council which had to give its consent to the interviews, the study was conducted in headquarters of the passenger transport division located at Frankfurt am Main, Germany. The headquarters has a total workforce of approximately 2,500 people who are responsible for the long and short distance trains as well as 22 bus companies that are owned by DB ML AG in Germany (DB AG 2012a). Besides the centralised organisation in Frankfurt am Main, each business unit has seven regional offices all over Germany with a workforce between 1,000 and 2,500 persons. Each business unit contains the major departments of controlling, marketing, production, business development and human resources. They are responsible for the regional operative business including maintenance, production and customer care (DB AG 2012b).

At the moment, a variety of trends such as the increase of competition through globalisation and liberalisation, demographic changes, climate change and scarcer resources are challenging DB AG (DB AG 2012b). The impact of this increased competition has hit the passenger transport unit very hard. Two basic programs which have impacted the unit's structure are the modernisation of the existing train fleet for the field of production and for the customer, the launch of a customer and quality initiative (to increase the operational stability of rail transport and to boost customer satisfaction). These initiatives are centralised in the headquarters in Frankfurt am Main and are mirrored in the region.

Strengthening the domestic market is the focus of the change project 'Fit for the future Regio'. It is a project that strives for long-term success in regional transport, by combining strategic and operating activities for the further development of business operations. A central objective of the program is to create structures and processes to ensure the long-term economic success of the business unit. Opportunities are offered in particular by a more intensive cooperation with organisations ordering services, optimised passenger services, an increase in competitiveness through cost optimisation, a market-oriented organisation, management of activities and the optimisation of the employment structure.

A similar project has been created in the regional bus market. In light of the expected increase in the intensity of competition in regional bus markets, the management wants to ensure the competitiveness in this area. The central programme 'Bus2012plus' was established in 2011 with the aim of taking advantage of opportunities for growth by securing mid-term planning and increasing employee satisfaction (DB AG 2012b).

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Finally, the DB Bahn Sales organisation has recently experienced a restructuring program called 'Sales 2020'. It embraces the same strategies such as lowering production costs, increasing efficiency and ticket sales. Replacing employees is also part of the programme.

The aforementioned activities and change programs are the basis for the changes that the questions in the questionnaire (specific readiness for change) are referring to.

### **4.4.2 Sampling design**

The research project is designed to analyse mindsets of civil servants in comparison to non-civil servants. Due to economic reasons, surveying the entire group of all civil servants and non-civil servants in Germany is not possible (Kotler *et al.* 2008). A sample is the segment of the population that is selected (Bryman and Bell 2007) and in order to generalise from any sample, the sample must of course be, recognised as representative. Here, the subset of DB AG civil servants and non-civil servants at the headquarters can be seen as a selected sample to represent this larger population. The headquarters employs approximately 2,500 persons of which 350 are civil servants. The size of the sample is followed by the question of 'how' people are chosen for the sample (Easterby-Smith, Thorpe and Jackson 2008).

### **4.4.3 Research instruments**

Data in general can be collected through interviews, questionnaires, observation or analysis of documents (McNabb 2008).

According to McNabb (2008), using a questionnaire for gathering primary data is a structured and scientifically recognised method. Questionnaires include all methods of data collection in which a person is asked to respond to for instance, telephone or online questionnaires (Saunders, Lewis and Thornhill 2009).

Questionnaires are helpful to solve problems through a descriptive design. The questionnaires are custom designed, can be used for small and large samples and are the research instrument in more than 85% of all quantitative research projects (Saunders, Lewis and Thornhill 2009). Questionnaires embrace a list of open or closed questions posed by the observer (McNabb 2008).

The design of the questionnaire can be both self-administered and interviewer-administered. The self-administered questionnaire means that the questionnaire is answered by the respondents. This type of questionnaire comes in different forms such

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as internet, postal or delivery by hand and collection later (Saunders, Lewis and Thornhill 2009). In an interviewer-administered questionnaire, the answers are usually recorded by the interviewer who conducts the interview per telephone or physically meets the respondents face by face (Bryman and Bell 2007). Both methods have advantages and disadvantages and a method is chosen based on questions such as: is it important to reach a particular group of people, whether the answers are subject to distortion, size of group required to answer, type and number of questions and cost of the survey (Saunders, Lewis and Thornhill 2009).

The decision of the research instrument is followed by the choice of the questionnaire.

### **Contact method**

Different ways of delivering a questionnaire such as per mail, telephone, personal and online, interview can be used to collect the needed information (Kotler *et al.* 2008). The methods have different advantages and disadvantages. Respondents to a mail questionnaire might be more honest because they do not feel a social control pressure in answering the questionnaire and it is inexpensive. However, the speed of collection and the flexibility of the mail questionnaire are low and the interviewer has no control over who answered the questions (Kotler *et al.* 2008). The telephone interview is a quick method that is also flexible, inexpensive and often accompanied by a high response rate. However, the costs are also high and it contains the chance of interviewer bias because it is dependent on the way the interviewer asks the question (McNabb 2008). The personal interview, also called face-to-face interview is flexible and the response rate and quality of the interview is high. Nevertheless, this method takes long to administer and is costly (Saunders, Lewis and Thornhill 2009). Finally, the web-survey displays a variety of advantages and disadvantages (Easterby-Smith, Thorpe and Jackson 2008). Pros of the online interview are the speed to gather a high amount of interviews and the low cost. Cons are the quality of the answers due to the question who answered the questionnaire, not everybody is using the internet and the respondents can easily quit the survey (Saunders, Lewis and Thornhill 2009).

For this study, a self-administered online based questionnaire completed by the respondents was used. The advantages and disadvantages of the questionnaire survey are exemplified by the chosen contact method of an online interview or web-survey. A web-survey is a fast and inexpensive way to collect data and is well suited to this study. The questionnaire is located on a webpage and the individuals are informed about the survey over the internet (Saunders, Armstrong, Wrong and Saunders 2009).



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In this study, the participants were informed by mail from the author. Advantages are the customised survey, the high flexibility, the confidence that the right person has responded and the easy handling of the questionnaire. Furthermore, a large amount of questionnaires can be easily sent out via the internet (Bryman and Bell 2007). The costs of handling are much lower than post mail, telephone and personal survey (Easterby-Smith, Thorpe and Jackson 2008). By using the web-survey, a high number of people in the company can be reached which in turn, might lead to a higher response rate. In the event of a low response rate, the researcher can post a reminder to participate (Bryman and Bell 2007).

However, there are several disadvantages in using this instrument. To avoid any difficulties or misunderstandings, the questions have to be self-explanatory and comprehensive, as the interviewees cannot ask anybody to explain or elaborate (Bryman and Bell 2007). Avoiding any log out effects, the questionnaire should last no more than 10 to 15 minutes. Further drawbacks of the method might be that not all civil servants and non-civil servants have internet access, or are familiar with using the internet. To avoid this problem, the questionnaire was only sent out to office workers while other types of employees, such as train conductors or craftsmen were not included in the survey.

Protecting privacy especially at DB AG is also an important topic in this context (Kotler *et al.* 2008). In the past, DB AG suffered a data scandal. Therefore, it is imperative that web-security is a top priority and to this end, the survey was thus conducted in close cooperation with the web-master and the works council.

### **Format of questions**

Most self-completion questionnaires are closed ones (Saunders, Lewis and Thornhill 2009). The questionnaire used in this thesis is a closed one, too. It is the aim to compare the answers with the results of international studies in the topic of readiness for change, P-E fit and the sub concepts, PSM and need for security. Open (ended) questions allow the respondents to give answers in their own way increasing the complexity.

Furthermore, the author chose the category questions. This type of questions is closed. The interviewee was only able to select one category for the answer out of a mutually exclusive category (Saunders, Lewis and Thornhill 2009).

### **Measurement scale**

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Rating questions are often used to collect opinion data and there is a definite advantage of rating the questions (Saunders, Lewis and Thornhill 2009). The answers can be ordered in a vertical or horizontal way. Due to the technical constraints of the SPSS survey software, the questions are vertically arranged.

Concomitant with rating questions is the use of the Likert-style rating scale (Saunders, Lewis and Thornhill 2009). Rensis Likert developed a five and seven point response scale which gives the respondents the opportunity to indicate how strongly they agree or disagree with the statement (Easterby-Smith, Thorpe and Jackson 2008). For this study, the five-point scale was used. The scale has an uneven number of points and a neutral mid-point. It allows the possibility that an interviewee has no opinion. In this case, on each side of the mid-point are two alternative response options to display moderate or extreme views. The response scale is an ordinal scale. The 'strongly agree' reflects the positive attitude while the 'strongly disagree' shows the opposite (Easterby-Smith, Thorpe and Jackson 2008). The graduations stages between are 2 = agree, 3 = neither agree nor disagree, 4 = disagree. In order to make interpretations more intuitive, items were recoded to range from 1 for strongly disagree to 5 for strongly agree. Therefore, higher numbers corresponded to higher agreement and higher levels of attributes. There were some exceptions where items were formulated negatively and are described in the section of this thesis when each scale of the topic is described and proofed. In the cases examined here, items were recorded in such a way that higher numbers corresponded to more positive attributes i.e. a higher readiness for change. The level of measurement is based on the Likert scale that was applied to all items except for the demographic items such as gender or education, where an ordinal scale was used.

### **4.4.4 Pilot study**

In social research, the term pilot study is used in two ways (Polit, Beck and Hungler 2001). It can refer to feasibility studies which are "*small scale version(s), or trial run(s), done in preparation for the major study*" (Polit, Beck and Hungler 2001, p.467) or it can be a pre-test or a trial out of a particular research instrument (Baker 1994). The pilot study was used here as a means of checking how well the developed research design worked and to figure out where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated (De Vaus 1993).

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The author is aware of the limitations of pilot studies. Certainly, a successful pilot study is not a guarantee for success of the full-scale study. It is based on small numbers, so indications are only found for small numbers not for the complete study. In accordance with Peat *et al.* (2002, p.57)

*“an essential feature of a pilot study is that the data are not used to test a hypothesis or included with data from the actual study when the results are reported”.*

The pilot study of the questions was conducted in order to verify the comprehensibility, acceptance, sequencing, logic and simplicity. For the pilot study, 25 respondents were included that were a mix of five non-civil servants, five non-civil servants with management responsibility, five assigned civil servants, five civil servants on leave and five civil servants with management responsibility.

The pilot study was conducted as a face to face interview. The face to face interview lasted on average two hours and delivered in-depth information which supported the interpretation of the findings in Chapter 7.

In this study, the results of the pilot study were used in a different way. First of all, all unnecessarily difficult or ambiguous questions were discarded and the questionnaire was adjusted in light of the feedback from the interviewees who were asked directly about ambiguities and difficult questions. It turned out that several items had to be adopted to make them fit for the proposed research. These items developed for the Anglo-American research arena did not fit into the German context. It could also be established that replies can be interpreted in terms of the information that is required and recorded the time taken to complete the questionnaire. The development of the items used in the questionnaire verified with the help of the pilot study is described in Section 4.4.5.

Interesting results of the interview are e.g. each civil servant of the pilot study worked for an association or charitable organisation while none of the non-civil servant did. Furthermore, civil servants feel stigmatised due to the prejudices towards civil servants in the society. Further results of the pilot studies are described in the next section combined with the explanation about the source of the items used for the questionnaire.

The learnings out of the pilot study helps to avoid any non-responses such as item-non response, unit non-response or further biases.

### **4.4.5 Item development**

According to the research aim, the questionnaire embraces different areas: Readiness for change, P-E fit (only P-O and P-J fit), PSM and need for security as seen in Chapter 1 (Figure 1.1).

For the development of the questions for the questionnaire, literature using the models associated with the measurement of the different topics was explored. Relevant existing models were used and if necessary expanded by selected items. This selection process will be explained in the next section. The items also had to be translated from English into German due to the German speaking interviewees.

#### **Research field: Readiness for change**

Testing readiness for change is complicated and highly influenced by the self-perception of the interviewee and hence, leads to a bias. This is the reason why two different measurement models for change readiness were tested with the help of a pre-test: the readiness for change in general and the individually perceived readiness for change - called specific readiness for change.

#### **General readiness for change**

General attitudes towards change can be measured with Oreg's (2006) resistance to change model. Piderit (2000) expanded this concept and proposed calling it response to change. The general readiness for change was examined in this 'response to change' model (Piderit 2000). To measure "*an individual's tendency to resist or avoid making changes*" (Oreg 2003, p.680), Oreg (2003) developed a 'Resistance to Change Scale'. In seven studies Oreg's Scale (2003) was tested and confirmed usable and reliable results. Oreg's change (2003) model used a six-point Likert and a 17-item scale for the measurement of four dimensions of resistance to change. The reliability coefficient was the Cronbach's Alpha of 0.82 (Oreg 2006). The dimensions included:

- Routine seeking: demand for maintaining current conditions; Oreg (2003) states that people who are routine seekers prefer low level of novelty and change. This leads to a resistance to change.
- Emotional reaction: reactions to imposed change; Oreg (2003) assumes that people with a high emotional reaction have a high fear of loss of control, have a low resilience and a tendency to resist change.

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- Short-term focus: willingness to endure the adjustment period of a change process; people with a high short-term focus tend to concentrate on the inconvenience caused by the change. People with this inconvenience have a tendency to resist change (Oreg 2003).
- Cognitive rigidity: ease of which the participant is willing to adapt the changes; in accordance with Oreg (2003) individuals with high cognitive rigidity would be less willing and capable to adjust change.

Since its development, many studies have employed variations of this resistance to change model. The content, predictive and construct validity was confirmed by several experts. Oreg, Vakola and Armenakis (2012) mentioned the change recipients' characteristics (resistance to change) as the antecedent category of the Oreg study (2003) and clustered the reaction into the categories affective, cognitive and behavioural. Foster (2010) focused on individual responses to organisational change by exploring the relationship between several items, such as resistance and commitment to change and used Oreg's (2003) model to measure resistance. Developed from the resistance model, Oreg and Berson (2011) conducted a further study concerning change attitudes. The instrument measured the employees' intention to resist a given organisational change. Bouckennooghe and Devos (2007) developed a self-report battery to gauge the readiness for change based on the findings of Oreg (2006) and Piderit (2000). The self-report battery consisted of three main directions within the readiness study: emotional readiness which was the affective reactions towards change, cognitive readiness embraced beliefs and thoughts people hold about the change and the intentional readiness which described the extent that employees put energy in the change process (Bouckennooghe and Devos 2007). The multiple usage of the Oreg's model by a variety of studies led to the decision to select two items from the routine seeking, two items concerning short-term focus, one item concerning cognitive rigidity and one item concerning emotional reaction categories for this study. Particularly, the results evinced by Von Weichs (2013) who successfully tested these items proved to be useful. Not all items were used in her study in order to reduce the complexity of the study. This was taken as an indicator of also not using the items for this study.

The item 'locus of control' was further added to measure the extent to which respondents were disposed to belief that they have the ability to control their environment. Holt *et al.* (2007a) further relate 'locus of control' to readiness factors and a comprehensive study of literature by Judge *et al.* (1999) also came to the conclusion that locus of control was a relevant factor relating to a dispositional variable of coping

with change. A high score indicated feelings of control over the environment. An example of a statement reflecting this item is 'What happens to me in the future mostly depends on me.' (Holt *et al.* 2007a).

### **Specific readiness for change**

To measure the individually perceived, also called specific change readiness, a multidimensional readiness for change construct developed by Holt *et al.* (2007a) was referred to. According to Holt *et al.* (2007a), earlier instruments appeared to measure readiness for change from only one of several perspectives such as change process, change content, change context and individual attributes. Out of the several perspectives on change, Holt *et al.* (2007a) synthesised the most significant themes and created a model. The model is aligned with the perspectives and a combination of the dimensions self-efficacy (confident of capability of the change, similar to individual attributes), personally beneficial (personal benefit of the change, similar to content), management support (recognition that the management supports the change, similar to process) and appropriateness (belief that the proposed change will address the causes of discrepancy, similar to context) (Holt *et al.* 2007c). Holt *et al.* (2007c) measured the cognitive reactions towards change. The reliability of the scales was proofed: The scale of appropriateness, management support and change efficacy exceeded Cronbach's alpha 0.70 and the Cronbach's alpha of personally beneficial was 0.65 in their study in 2007 (Holt *et al.* 2007c). The participants expressed their agreement with the help of the seven-point response scale from 1 = strongly disagree to 7 = strongly agree (Holt *et al.* 2007c). To underline the reliability of the model, many other researchers have also tested this model such as Julita and Rahman (2011) and Khan (2011). Khan (2011) for example conducted a study in the developing countries to investigate the role of organisational cultural traits of involvement and adaptability on employees' readiness for change. Bouckennooghe, Devos and Van den Broeck (2009) started to develop a new readiness for change measurement instrument which was based on the instrument developed by Holt *et al.* (2007c) and turns out as a shortened version. The content and predictive validity of Holt *et al.* (2007c) was reviewed by experts.

Following the advice of researchers such as Bouckennooghe, Devos and Van den Broeck (2009), it was decided to conduct further studies concerning specific readiness for change, based on the scale model of Holt *et al.* (2007c). For this study, the perspective and tense of the items were changed, so that the change to which the questions were referred to have already taken place and is not an anticipated event in the future. In this case, the questions referred to change event in the organisation

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described in Section 4.4.1 when asking for the specific readiness for change. A clear distinction between the measure of general readiness with the help of Oreg's model (Oreg 2003) and the use of the model of Holt *et al.* (2007c) to measure specific readiness together in this study has to be made. The four topics Holt *et al.* (2007c) measured in their model embrace the topic appropriateness, management support, personally beneficial and self-efficacy (description Section 2.2.3). For the topic self-efficacy, five out of six items for the pre-test were used. The item, 'After this change is implemented, I am confident I will be able to do my job.' has been left out because the item was similar to 'I am confident that I perform successfully after the last change was made.' The pre-test confirmed the items.

Almost all items were selected from the original model of Holt *et al.* (2007c) and have been used to measure the theme appropriateness. To avoid any unnecessary confusion for the interviewee, the item 'There are legitimate reasons for us to make this change.' is not used due to a very similar question which is already part of the model (similar question: There are a number of rational reasons for this change to be made. The pre-test confirmed the items.

The five item scale to measure management support has been adopted to differentiate more between the actual support of the change, the verbal commitment to change by the management and the success of the change realised by the management. The item, 'I am sure our management will change their minds before we actually implement this change.' was changed into 'I am sure our management changed their minds before we actually implement the last change.' as it reveals how the interviewee considers management decision-making skills and refers to the situation that the change has taken place in the past. The item 'Our management has sent a clear signal that our organisation is going to change.' was made into a stronger statement 'I believe management has done a great job in bringing about this change.' The additional item, 'Our organisation has won some valuable assets since we adapted this change.' helps to examine the results of the change. Again, the items were confirmed by the pre-test.

Holt *et al.* (2007c) developed six items to measure personally beneficial changes. Here five items were chosen for the pre-test because of the high overlap of two questions and leaving out 'My future in this job will be limited because of this change.' The results of the pre-test showed that the scale worked well.

**Research field: Person-Environment fit with the sub concepts Person-Organisation fit and Person-Job fit**

## **Research process, research design and research methodology**

Out of the umbrella concept of P-E fit, the author concentrated on the P-O und P-E fit as described and argued in Section 2.2.4. This study took a direct approach to measuring the congruence and compatibility between the respondents and their organisation.

Direct questions assess the fit by asking the respondents for their perceptions of their organisation fit (Kristof-Brown, Zimmermann and Johnson 2005). The dimensions of the P-O fit have varied from values, goals, personality congruence and needs. The most common dimensions have been values and were therefore tested (Verquer, Beehr and Wagner 2003). Research indicates that the direct measures are stronger and better predictors of employers' outcomes than indirect measures (Kristof-Brown, Zimmermann and Johnson 2005). The participants were asked to indicate their agreement from 1 = strongly agree to 5 = strongly disagree. The statements are taken from a review of existing research (Kristof 1996). Based on Cable and Judge (1996) and Lauver und Kristof-Brown (2001) the items were: 'My values are very similar to the values and goals of our organisation.' and 'I am able to maintain my values at this company.' The Cronbach's alpha is 0.83 (Lauver und Kristof-Brown 2001). The pre-test confirmed the use of the items.

The P-J fit describes the relationship between respondents' characteristics and the job performed for the organisation. It is conceptualised as the match between individual knowledge, skills, and abilities of the individuals, and what is provided by the job. P-J fit can be either demands-ability fit or need-supply-fit. Each fit affects employee attitudes and behaviours differently (Resick, Baltes and Shantz 2007). The organisation should consider employees as instruments for organisational effectiveness, but must also consider the subjective well being of employees. Therefore, considering both fits in P-J fit concept may provide a better explanation of related factors. In addition, using an incomplete concept means the use of only one aspect of P-J fit to assess fit which resulted in inconsistent results - which was revealed by the pre-test.

The demands-ability fit is represented by the item: 'There is a good match between the requirements of this job and my skills.' (Cable and DeRue 2002). The alpha reliability of the scale is 0.89 (Cable and DeRue 2002). The needs-supply fit was measured by the items: 'My job fulfils my expectations of a job.' (Piasentin and Chapman 2006) and 'The job that I currently hold gives me just about everything that I want from a job.' (Kristof 1996). The Cronbach's alpha here is 0.84.

### **Research field: Public Service Motivation**



## **Research process, research design and research methodology**

The following section breaks down the PSM topic and sub concepts of variables that were used for the measurement including the source of the items, number of items, and a discussion of the statistical estimates of reliability pertaining to the item used.

The only known direct measure of PSM is Perry's (1996) model. Perry (1996) introduced a general, broadly applicable pattern of PSM where he developed a 33 explorative item scale to measure PSM. He identified four empirical components of the PSM construct of attraction to public policy-making, commitment to the public interest and civic duty, compassion, and self-sacrifice (Perry 1996). Perry (1996) reported Cronbach's alpha measurements ranking from 0.69 to 0.74 for this PSM scale.

A significant number of studies using the dimensions of Perry's (1996) scale have examined the antecedents and effects of PSM. Researchers have generally confirmed the viability and the conceptual structure of the measurements with various samples and respondents from different nations (Hammerschmid, Meyer and Egger-Peitler 2009; Vandenabeele 2008; Steijn 2008; Moynihan and Pandey 2007; Coursey and Pandey 2007).

The nature and impact of PSM in the United States have been studied to a large extent. However, this is not the case in other European countries such as Austria, France, the Netherlands or Germany (Kim and Vandenabeele 2010). In response to this deficit, Hammerschmid, Meyer and Egger-Peitler (2009) adapted the four dimensions of PSM and put them into a European context (in this case Austria) in order to conduct research on the PSM topic. A six-point item scale was used with 1 for strongly agree and 6 for strongly disagree (Hammerschmid, Meyer and Egger-Peitler 2009) and the Cronbach's alpha is 0.32. Cerase and Farinella (2009) used a slightly, modified scale of Perry (1996) and Vandenabeele (2008) adapted to measure PSM. Camilleri (2007) examined various antecedents to establish their effects on PSM in France by using Perry's (1996) PSM scale. A seven-point Likert scale was used. The Cronbach's alpha results are in a range from 0.54 to 0.64 (Camilleri 2007). In order to implement an international measurement scale for PSM, Kim and Vandenabeele (2010) expanded Perry's scale (1996) with a mix of pre-existing items from other previous studies. In total, they tested a 33-item scale drawn from Perry's (1996) four dimension. The five-point Likert scale (1 for strongly disagree to 5 for strongly agree) was used and the Cronbach's alpha scores ranged from 0.63 to 0.87 (Kim and Vandenabeele 2010). The reliability was confirmed of the scale.

Wright (2009) analysed the use of Perry's PSM scale. He discovered that the complete scale is rarely fully used in empirical research because it requires a lot of time and space (Wright 2009). Moynihan and Pandey (2007) measured three out of four

## **Research process, research design and research methodology**

variables from Perry's scale (1996) such as policy-making, commitment to public interest or civic duty and compassion, in order to expand the amount of empirical research on PSM. The scale exhibited the Cronbach's alpha of 0.67 where 1 is used for strongly disagree to 5 for strongly agree (Moynihan and Pandey 2007). Researchers like Brewer and Selden (1998) and Kim (2006) measured only two dimensions and Castaing (2006) used only one. Coursey and Pandey (2007) proposed and tested a three-dimensional, shortened instrument for PSM based on Perry's (1996) exploratory 24-item scale. Leisnik and Steijn (2009) shortened the scale to eleven items based on Perry's (1996) model. The result showed a Cronbach's alpha of 0.66. Responses are possible on a five-point Likert scale ranging from 1 for completely disagree to 5 for completely agree (Leisnik and Steijn 2009). Christensen and Wright (2011) went even further and reduced the scale to five items, mentioning one statement out of each dimension and adding on further items. They used a seven-point Likert scale anchored at 0 for strongly disagree and at 6 for strongly agree.

Steijn (2008) took out the aspect of the dimension of 'public interest' developed by Perry (1996) to conduct a study about the effect of PSM on vocational outcome variables. Respondents answered by using a five-point Likert scale (1 for very unimportant to 5 for very important) (Steijn 2008).

The survey-based measurement of PSM developed by Perry (1996) is a useful tool. In fact, according to Kim and Vandenabeele (2010), eight out of 19 PSM studies employ this four theme scale allowing the results to be easily compared. The scale used in the study is composed of four dimensions: attraction to policy-making, commitment to public interest, compassion and self-sacrifice supporting therefore a comprehensive view of PSM. Moreover, in light of the aim of comparing the results in an international context, the Perry's PSM scale has proven to be an adequate choice.

The author analysed the scale conceptually and operationally for this study. Taking into account other internationally conducted PSM studies, an attempt has been made to consider German culture as well.

Each of the four dimensions has several reflective items that have been adopted and developed. Starting with the attraction to policy-making, the participants were asked to indicate their agreement with politics. The three-item scale developed by Perry (1996) measures this theme. The pre-test confirmed the items.

Four out of the five items were used to measure public interest. The item, 'It is hard for me to get intensely interested in what is going on in my community.' was left out. In accordance with Hammerschmid, Meyer and Egger-Peitler (2009) there are no German

## **Research process, research design and research methodology**

equivalents to the American term 'community'. To improve the scale after the pre-test, the item, 'An official's obligation to the public should always come before loyalty to superiors.' was added to the questionnaire.

The theme compassion is measured by Perry (1996) with the help of an eight-item scale. The author used a three-item scale for compassion. Five items are left out due to the specific aspects of German culture such as, 'To me, patriotism includes seeing to the welfare of others.' The basis for the item selection was a mix of the original validity and reliability results reported by Perry (1996) and a subjective assessment of the face validity, distinctiveness, and clarity of the items similar to Coursey and Pandey (2007). The left out items are: 'I am often reminded by daily events about how dependent we are on one another.', 'There are few public programs that I wholeheartedly support.', 'I am rarely moved by the plight of the underprivileged.' and 'Most social programs are too vital to do without.'

The pre-test confirmed the items and reliability. The content validity was proofed by expert judges as mentioned before.

Perry (1996) measured self-sacrifice with ten items of which the author tested five to reduce complexity. Also, the use of the theme self-sacrifice is discussed and Coursey and Pandey (2007) did not even test the theme of self-sacrifice. The items listed below were not used 'I believe in putting duty before self.', 'Doing well financially is definitely more important to me than doing good deeds.', 'Much of what I do is for a cause bigger than myself.', 'Serving citizens would give me a good feeling even if no one paid me for it.' and 'I am prepared to make enormous sacrifices for the good of society.'

The selection of items is a mix of pre-existing items that loaded highly on PSM dimensions.

### **Research field: Need for security**

The theme 'need for security' is the fourth concept and measures the relevance of perceived job security. In Germany, 'security' plays a major role in the public sector. To address this topic, the items, 'Security becomes a central topic in my life.' and 'I am concerned about the idea being without work for a period of time.' were developed. The items 'When I chose my career, I paid more attention on the work content than on job security.' and 'It is important for me to know that my job is secure.' were adapted from Salladarre, Hlaimi and Wolff (2011) to measure the impact of the 'security'. The pre-test confirmed the items.

**Demographic and control variables**

With the help of demographic and control variables, the author intends to conduct a more detailed analysis. The research frame was chosen by the sample of the working force at the DB AG.

Several demographic variables were included to the study: age, gender, education level, years of work experience, work contract. The gender of the participants was collected with the following multiple choice question 'What is your gender?' Females were coded as 1 and males coded as 0. The age of the respondent was measured using the following multiple choice question: 'What is your age?' The answers were coded by 1 = under 21 years, 2 = 21 to 30 years, 3 = 31 to 40 years, 4 = 41 to 50 years and 5 = 51 to 60 years and 6 = over 60 years. This coding was a result of the Works Council's insistence upon this scale to ensure anonymity. The level of education was collected from the following multiple choice survey questions: 'What is the highest level of education you have completed?' This was coded from 1 = High school or associate's degree, 2 = Bachelor's or master's and 3 = others.

The tenure at the DB AG was collected from the multiple choices: 1 = under 5 years, 2 = 5 to 14 years, 3 = 15 to 24 years, 4 = 25 to 34 and 5 = over 34 years.

The work contract was measured using 1 = assigned civil servant, 2 = civil servant on leave, 3 = civil servant in a managing position, 4 = non-civil servant and 5 = manager (non-civil servant).

Further control variables were used to allow for additional influencing items on readiness for change beside the concepts P-O fit, P-J fit, PSM and need for security. The control items came from the background change impact, job satisfaction, turnover intention and organisational commitment. Authors such as Cunningham (2006); Holt *et al.* (2007c) used these variables in a change context and they were examined for relevance for this study as well. The researchers confirmed the influence of readiness for change on these variables. In order to find antecedents of readiness for change, the author of this study used the items to analyse the influence on readiness for change.

'Change impact' should discover the psychological background the interviewee came from and the influence of the psychological background on the readiness for change level. To measure the influence the change had on the interviewee, the author developed and included the questions: 'The change had a major positive impact on my job and my job conditions.' and 'The change had a major negative impact on my job and my job conditions.' Again, the pre-test confirmed the items.

## **Research process, research design and research methodology**

‘Job satisfaction’ helped to interpret the results in the way of satisfaction with the task in the job. ‘Turnover intention’ also worked for an indicator in the direction of job satisfaction and described the willingness to stay with the organisation. ‘Organisational commitment’ describes the individual psychological commitment to the organisation.

‘Job satisfaction’, ‘turnover intention’ and ‘organisational commitment’ have been positively related to change readiness and negatively related to change resistance in several studies in the last years (e.g. Judge et al. 1999; Wanberg and Banas 2000; Rowden 2001; Oreg 2003; Cunningham 2006).

Von Weichs (2013) introduces the item ‘exploited potential’ which was adopted for this study, too. This item stands for a potential performance factor. The aim is to measure performance in relation to the specific jobs and work conditions of individual employees. In order to these insights the respondents are asked to rate how well they are able to exploit their individual potential in their specific job.

### **4.5 Sequencing**

The sequencing of the questionnaire is as follows: it started with the topic general readiness for change, followed by the specific readiness for change. The next part assessed around the PSM, general questions to P-O fit and P-J fit and need for security. The author followed this tactic to conduct the study from broad to narrow. The demographic questions were the last part of the questionnaire. This sequencing also worked well in the pilot study.

### **4.6 Procedure of the data analysis**

The analysis was conducted with the help of SPSS, the analysis software for quantitative approaches. The analysis was divided in several phases and followed one by one the order of the concept presentation of the literature review. Each concept such as readiness for change, P-O fit, P-J fit, PSM, need for security, control and demographic variables was calculated one by one. An important aim was to analyse the readiness for change and the influencing factors on readiness for change.

The resulting statistics were utilised individually for each concept.

The first concept was the calculation of the readiness for change divided into general and specific readiness for change:

- Descriptive statistics: form the scale and recode the items, calculate Cronbach’s alpha, the mean values, standard deviation

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- Bivariate and multivariate analysis: calculate the factor analysis (Kaiser-Meyer-Olkin criterion), independent-sample t-test, the correlations, the regressions, the Spearman's rho rank correlation coefficient; furthermore, calculate the stepwise regression for all used items of the P-O and P-J fit, the PSM, need for security, demographic and control variables

The next concept was the P-O and P-J fit:

- Descriptive statistics: form the scale and recode the items, calculate Cronbach's alpha, the mean values and standard deviation
- Bivariate and multivariate analysis: calculate the correlations of the scale and the regressions for the impact on readiness for change

That was followed by the concept of PSM:

- Descriptive statistics: form the scale and recode the items, calculate the Cronbach's alpha, the mean values, standard deviation
- Bivariate and multivariate analysis: calculate the factor analysis (Kaiser-Meyer-Olkin criterion), independent-sample t-test, the correlations and the regressions

Finally, the following calculation was done for need for security:

- Descriptive statistics: form the scale and recode the items, calculate Cronbach's alpha, the mean values and standard deviation
- Bivariate and multivariate analysis: calculate the correlations and regressions

The statistical methods used are explained briefly below:

- Correlation: is used to test the strength of linear relationships between variables (Saunders, Lewis and Thornhill 2009)
- Cronbach's alpha: test of internal reliability of the data (Brymann and Bell 2007)
- Factor analysis: helps to verify the standard distribution, a statistical technique used for large numbers of variables to establish whether there is a tendency for groups of them to be inter-related (Brymann and Bell, 2007)
- Independent sample t-test: comparison of the mean of two samples assumed to be unrelated (Boslaugh 2012)
- Mean value: the arithmetic average of a set of numbers (Boslaugh 2012)

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- Normal distribution: special form of the symmetric distribution (Brymann and Bell 2007)
- One-sample t-test: a test to compare the mean of a sample with a known mean (Boslaugh 2012)
- Regression: calculation of a regression coefficient and regression equation using one independent variable and one dependent variable (Saunders, Lewis and Thornhill 2009)
- Spearman's rho: the strength of the relationship between two ordinal variables (Saunders, Lewis and Thornhill 2009)
- Standard deviation: spread of data values around the mean, the square root of variance (Boslaugh 2012)

### **4.7 Translation**

As the research was conducted in a German environment, the questions were translated and adapted by the author and checked by a professional native English speaker. The author used the back translation method to avoid any disadvantages (Saunders, Lewis and Thornhill 2009). The method included the translation of the original questionnaire to German and back again to English. According to Saunders, Lewis and Thornhill (2009, p.385) this approach offers the advantage *to “discover most problems”*.

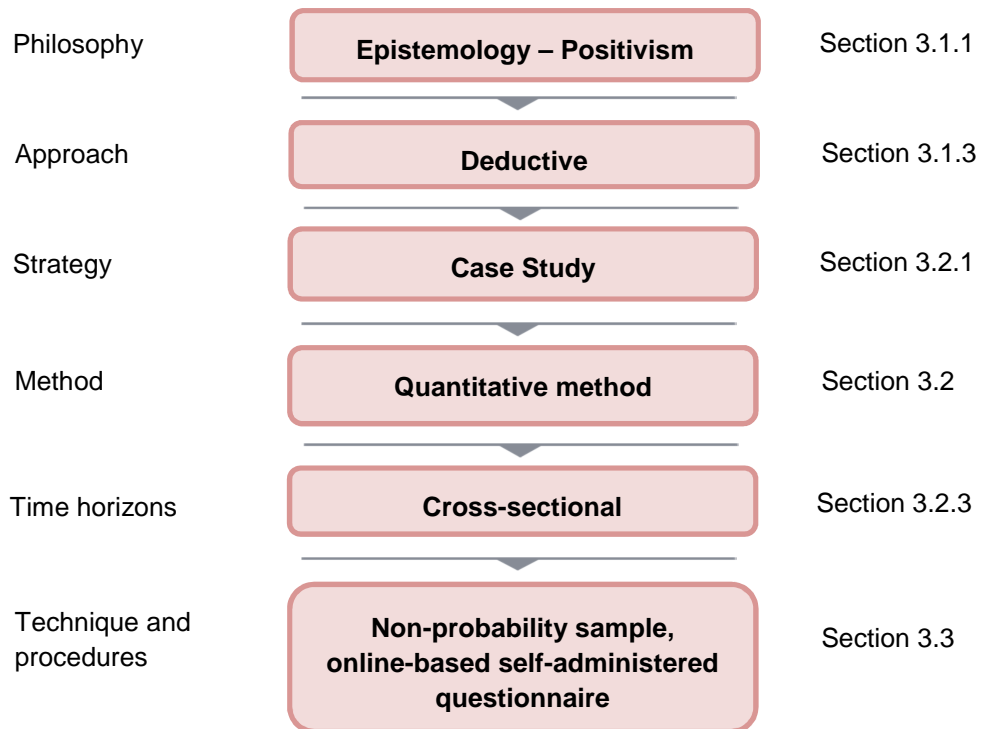
The German questionnaire is included in Appendix A Questionnaire.

### **4.8 Chapter summary**

Chapter 3 described the theoretical research background of this study with the help of the research onion model developed by Saunders, Lewis and Thornhill (2009).

As seen in Figure 4.3, the research philosophy, design and strategy have been explained in detail. Additionally, the case study DB AG was presented followed by some further explanations concerning the research method and the item development. A pre-test was conducted in order to check the viability of the questionnaire.

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**Figure 4.3 Research structure**

Source: In accordance with Saunders, Lewis and Thornhill (2009)

In the next chapter, the results of the survey are described.



### 5 Data analysis

Chapter 5 begins with the description of the key survey facts. The data for the analysis was collected with a quantitative mono-method approach in a non-probability sample with the help of an online-based self-administered questionnaire. The data analysis was done topic by topic in the order of the literature review, the stated hypotheses and objectives described in Chapter 2. Starting with the descriptive statistics, the chapter presents the result of the analysis of the concepts: general and specific readiness for change, P-E fit with a focus on P-O fit and P-J fit, PSM and need for security (Figure 5.1).

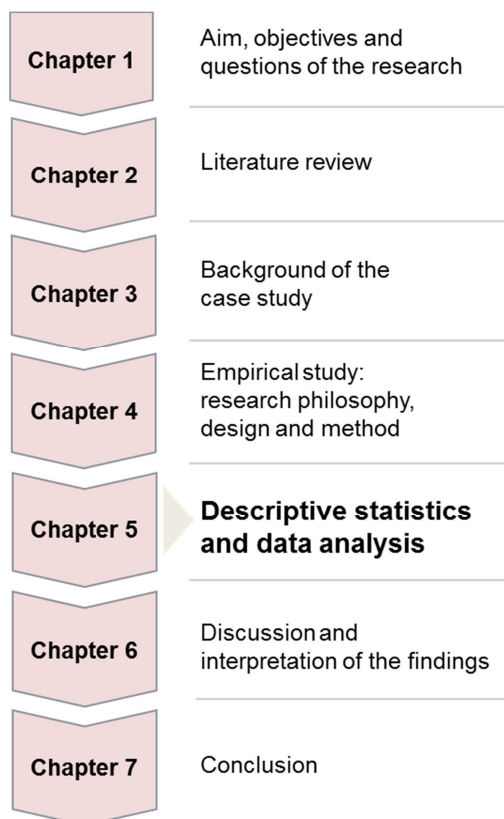


Figure 5.1 Research process: Chapter 5

#### 5.1 Introduction

The study was conducted in March 2013 at the DB AG headquarters in Frankfurt am Main, Germany. The study was undertaken by an online survey and was sent out per email to 2,504 civil servants and non-civil servants. The survey was conducted over a time of two weeks. The author is part of the workforce and was handled as the sender

of the email. The hosting of the survey was done by Questback public limited company, a global leader of Enterprise Feedback Management.

The net participation was 32.0% (813) out of the total sample of 2,504. The completion rate out of the net participation rate reached 64.5% with 524 questionnaires and 35.5% (289) suspended the survey.

The mean processing time was 12.7 minutes. The email was sent out twice on the Mondays. Of the participants, 60.1% (318) answered in the first and 39.1% (206) in the second week. The peak of both weeks was on the successive Mondays when the send out took place. The majority of 35.8% (193) answered between 9 and 10 am.

The highest dropout rate was on the topic general readiness for change with 9.9% (81) out of 813. This was followed by the welcome page with 8.2% (67 out of 813) and the topic asking for the specific readiness for change with 6.7% (54 out of 813).

### **Procedure of the analysis**

To answer the research objectives and hypotheses, the study was conducted as a quantitative survey. With the help of the software system SPSS, the data was analysed concept by concept in the following way:

- (1) Generate an overview of the sample in a descriptive way
- (2) Create the scale of each concept
- (3) Calculate the mean values and standard deviations per concept
- (4) Test the reliability (through Cronbach's alpha)
- (5) Create for selected concepts the factor analysis, one-sample t-test and independent sample t-test
- (6) Calculate the correlations and regressions for each concept if appropriate

### **5.2 Data analysis of the research fields**

As described in Section 4.6, the author followed a plan to answer the research objectives and hypotheses starting with the descriptive statistics. The descriptive statistics were calculated to provide a description of the sample and to provide basic information about the scales used in this study.

In accordance with Tukey (1977), descriptive analyses are an appropriate starting point for data analysis as they can expose data or coding errors in the beginning. It also gives a feeling about the sample and supports the understanding of the results. Firstly, an analysis of the sample demographics, as illustrated in Table 5.1, was undertaken:

**Table 5.1 Overview sample descriptive**

(N=524)		Frequency	Percentage
<b>Age</b>	21 to 30	50	9.5%
	31 to 40	144	27.5%
	41 to 50	185	35.3%
	51 to 60	130	24.8%
	Over 60 years	15	2.9%
<b>Gender</b>	Female	190	36.3%
	Male	334	63.7%
<b>Level of education</b>	High school or associate's degree	112	21.4%
	Bachelor's or master's degree	380	72.5%
	Others	32	6.1%
<b>Tenure to the organisation</b>	Under 5 years	70	13.4%
	5 to 14 years	156	29.8%
	15 to 24 years	104	19.8%
	25 to 34 years	108	20.6%
	Above 34 years	86	16.4%
<b>Role in organisation</b>	Assigned civil servant	42	8.0%
	Civil servant on leave	82	15.6%
	Civil servant in a managing position	14	2.7%
	Non-civil servant	290	55.3%
	Manager (non-civil servant)	96	18.3%

Summing up the results of the roles comparing civil servants and non-civil servants including managers in Table 6.2, the latter made up almost three quarters of the sample. Almost one third of men were civil servants, but only a little more than one sixth of the women were civil servants (Table 6.2).

**Table 5.2 Overview gender and role in the organisation**

		Gender		
		Female	Male	Total
Civil servants	Count	33	105	138
	% by gender	17.4%	31,5%	26.5%
Non-civil servants	Count	157	229	386
	% by gender	82.6%	68.5%	73.5%

As described in Section 2.4, the DB AG differentiates between three groups of civil servants: assigned civil servants, civil servants on a leave and civil servants in a managing position. Differences between the groups are only evident in slightly different conditions in the work contracts. They all share the background of being a civil servant

with the typical work conditions that this status implies. This was the reason why the author mostly consolidated the data and formed two groups: civil servants and non-civil servants.

**Table 5.3 Overview roles in the organisation and age groups**

	Civil servants		Non-civil servants		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
21 to 30	0	0.0%	50	13.0%	50	9.5%
31 to 40	4	2.9%	140	36.3%	144	27.5%
41 to 50	47	34.1%	138	35.8%	185	35.3%
51 to 60	76	55.1%	54	14.0%	130	24.8%
Over 60 years	11	8.0%	4	1.0%	15	2.9%
Total	138	100.0%	386	100.0%	524	100.0%

The sample reflects the personnel structure of the DB AG headquarters in Frankfurt (Table 5.3).

The age distribution of the civil servants equals almost the overall employee structure of the DB AG in Germany:

- none of the civil servants is under 30 years
- 1.9% (2.9% in the survey) of the civil servants were between 31 and 40 years
- 25.8% (34.1% in the survey) were between 41 and 50 years and
- 55.1% (55.6% in the survey) were between 51 and 60
- over 60 years 13.9% (8% in the survey)

The non-civil servants display similar age distribution (Bundeseisenbahnvermögen 2012).

The gender distribution of the civil servants is also similar to the current distribution: 17.4% of the civil servants in this study were women compared to 11.7% at the headquarters and among the full population of DB AG. The gender distribution of non-civil servants in the study and the headquarters is also similar (Bundeseisenbahnvermögen 2012). That leads to the conclusion that the results of the survey are transferable to the overall population at the headquarters of the DB AG.

The fact that the civil servants are on average older than the non-civil servants, and that the age cohort between 21 and 30 years is missing, could lead to a focus of the analysis of a comparable age cohort. This would indicate that a comparison of the result of civil servants and non-civil servants between the ages of 31 to over 60 years could be conducted. This is not done because the results display the reality of the work

situations at the headquarters which includes an older age average for civil servants. As a positivist, the author feels it is important to reflect the existent reality without any artificial distortions. Nevertheless, the influence of age is tested in several statistical analyses and a section (Section 6.5) is added for this topic.

For the purpose of the data description, the influence of gender, role and education is calculated. The significant influence of gender, role and education is proofed by the use of the Chi-square test. Table 5.4 shows that in accordance with the  $p < 0.0005$  resulting out the Chi-square test, a relation between roles and gender exists. The amount of women working as non-civil servants is significantly higher than of men.

**Table 5.4 Role and gender: Chi-square test**

			Female	Male	Total
Role	Civil servant	Amount	33	105	138
		% of the gender	17,4%	31,4%	26,3%
	Non-civil servant	Amount	157	229	386
		% of the gender	82,6%	68,6%	73,7%
Total		Amount	190	334	524
		% of the gender	100%	100%	100%

Concerning the relation between role and level of education, the Chi-square test display significant results: more non-civil servants have a bachelor or master than a high school or associate master degree (Chi-square test  $p < 0.0005$ ). The differences exists even if the “other” is taken out of the calculation (Chi-square test  $p < 0.0005$ ).

**Table 5.5 Role and level of education: Chi-square test**

		High school or associate degree	Bachelor or master degree	Others	Total	
Role	Civil servant	Amount	45	82	11	138
		% of the Level of education	40,2%	21,6%	34,4%	26,3%
	Non-civil servant	Amount	67	298	21	386
		% of the Level of education	59,8%	78,4%	65,6%	73,7%
Total	Amount	112	380	32	524	
	% of the Level of education	100%	100%	100%	100%	

The Chi-square test delivered no significant results concerning the influence level of education and gender (Chi-square test  $p=0.831$ ).

**Table 5.6 Level of education and gender: Chi-square test**

			Female	Male	Total
Level of education	High school or associate degree	Amount	41	71	112
		% of gender	21,6%	21,3%	21,4%
	Bachelor or master degree	Amount	139	241	380
		% of gender	73,2%	72,2%	72,5%
	Others	Amount	10	22	32
		% of gender	5,3%	6,6%	6,1%
Total		Amount	190	334	524
		% of gender	100%	100%	100%

### 5.2.1 Validation of the data: concept readiness for change

Two different models of readiness for change were measured: the general mindset about readiness for change (general readiness for change) and the opinion about a change occasion that took place in the past described in Section 4.4.1 (specific readiness for change with four sub concepts). The reliability analysis confirms the

scales as homogenous and in accordance with the Kaiser-Meyer-Olkin criterion (KMO). The sample was very well suited for a factor analysis.

### **General and specific readiness for change**

The descriptive statistics with the calculation of the mean values, correlations, standard deviations and Cronbach's alpha of the scales of general readiness and specific readiness for change are shown in Table 5.7.

**Table 5.7 General readiness and specific readiness for change: Overview descriptive statistics results**

<b>Concepts</b>	<b>Sub concepts</b>	<b>Mean value</b>	<b>Correlations</b>	<b>Standard deviation</b>	<b>Cronbach's alpha</b>
<b>General readiness</b>	Routine seeking, emotional reaction, short term focus, cognitive rigidity, locus of control	2.80 - 3.70	0.10 - 0.46	0.927 - 1.071	0.69
<b>Specific readiness</b>	Self-efficacy	3.45 - 4.45	0.09 - 0.60	0.673 - 1.123	0.74
	Appropriateness	3.09 - 3.52	0.49 - 0.78	1.035 - 1.179	0.91
	Management support	3.17 - 3.77	0.34 - 0.69	1.011 - 1.094	0.81
	Personally beneficial	2.86 - 3.77	0.18 - 0.66	0.981 - 1.347	0.77

The scale of general readiness for change consists of seven items embracing the topics routine seeking, emotional reaction, short term focus, cognitive rigidity and locus of control (Appendix A Questionnaire).

The concept of specific readiness for change is divided into four sub concepts which formed the specific aspects of readiness for change: self-efficacy, appropriateness, management support and personally beneficial. Each sub concept is analysed in detail and individually. At the moment, discussions are being carried out in the literature to summarise all sub concepts into one specific readiness for change measurement tool (Section 2.2.2, Section 4.4.5). For the analysis of this data, the sub concepts are dealt with separately.

All items which were formulated in such a way that higher agreement corresponded to a lower readiness for change and a higher resistance to change were then recoded so that higher numbers reflected higher readiness for change.

The results of the descriptive statistics confirmed the use of the scales and the reliability.

### **5.2.2 Supplementary bivariate and multivariate analyses of the concept: readiness for change**

After the descriptive statistics are done, the statistical analyses with the aim to answer the first research objective and the first two hypotheses will be presented. Derived from the first research objective 'To analyse and explore the relevant items of the existing concepts of readiness for change', the hypotheses focused on influencing concepts on readiness for change and differences of readiness for change level of civil servants and non-civil servants. General and specific readiness for change consisted of 29 items.

#### **Factor analysis: readiness for change items to form sub concepts**

Factor analysis was applied to all 29 items relating to general and specific readiness for change as a way to reduce the variables and to categorise them before the calculation of the t-tests, correlations and regressions (Table 5.8).



**Table 5.8 General and specific readiness for change: Factor analysis**

Rotated Component Matrix <sup>a</sup>					
	Appropriate-ness	Management support	General readiness	Self-efficacy	Personally beneficial
<b>General readiness</b>					
I'll take a routine day over a day full of unexpected events any time.	0.120		<b>0.560</b>	0.120	
I generally consider changes to be a negative thing.	0.187		<b>0.661</b>	0.110	0.179
When I am informed of a change, I am a little bit concerned.		0.193	<b>0.647</b>	0.133	0.275
Changing plans seem like a real hassle to me.			<b>0.626</b>	0.163	
I rarely change my mind.	0.146		<b>0.438</b>	-0.116	
What happens to me in the future, mostly depends on me. <sup>b</sup>		0.209	0.231	0.132	<b>0.502</b>
I avoid changes even when they are good for me.			<b>0.622</b>		
<b>Specific readiness: Self-efficacy</b>					
I am confident that I perform successfully after the last change was made.	0.144		0.138	<b>0.796</b>	
I was intimidated by all the tasks I had to learn because of this change.		0.399	<b>0.490</b>	0.140	0.274
When we implemented the last change, I feel I can handle it with ease.	0.169	0.166	0.239	<b>0.644</b>	0.309
I have the skills that are needed to make the last change work.	0.109			<b>0.836</b>	
When I set my mind to it, I learned everything that is required when the last change was adopted.	0.128		0.105	<b>0.772</b>	
<b>Specific readiness: Appropriateness</b>					
It didn't make much sense for our organisation to initiate the last change.	<b>0.581</b>	0.268	0.329	0.165	
There are a number of rational reasons for the last change to be made.	<b>0.653</b>	0.119	0.217	0.127	0.211
The time we spent on the last change should have been spent on something else.	<b>0.594</b>	0.326	0.265		0.196
I think that our organisation was benefited from the last change.	<b>0.813</b>	0.263	0.140		0.172
The last change improved our organisation's overall efficacy.	<b>0.823</b>	0.218	0.120	0.116	0.199
The last change matched the priorities of our organisation.	<b>0.786</b>	0.233			0.202
Our organisation won some valuable assets since we adapted the last change.	<b>0.794</b>	0.209		0.156	

Rotated component matrix <sup>a</sup>					
	Appropriate-ness	Management support	General readiness	Self-efficacy	Personally beneficial
<b>Specific readiness: Management support</b>					
Our management was and is committed to the last change.	0.205	<b>0.682</b>	-0.111	0.174	
I think we spent a lot of time on the last change, although the management didn't even want it implemented.	0.193	<b>0.721</b>	0.128		
I am sure our management changed their mind before we actually implemented the last change.	0.134	<b>0.682</b>		-0.127	
I believe management has done a great job in bringing about the last change.	0.441	<b>0.616</b>		0.158	0.171
<b>Specific readiness: Personally beneficial</b>					
I am worried I will lose some of my status in the organisations when this change is implemented again.		0.286	0.344	0.195	<b>0.409</b>
The last change gave me new career opportunities.	0.400				<b>0.703</b>
The last changes make my job easier.	0.589				<b>0.559</b>
When the last change is finally implemented, I believe there is a lot for me to gain.	0.465				<b>0.687</b>
In the long run, I feel it will be worthwhile for me if our organisation adopts the changes.	0.321		0.196		<b>0.543</b>

Extraction method: Principal Component Analysis.

Rotation method: Varimax with Kaiser-normalisation.

a. The rotation converged in 9.

b. Analysis assigned 'What happens to me in the future depends on me.' due to a high factor content to factor 'Personally beneficial'

According to the Kaiser-Meyer-Olkin (KMO) criterion, the sample was very well suited for factor analysis with a KMO=0.915. The share of explained variance reached 56.8% leading to the result that a five-factor solution delivered high information coverage.

An additional factor analysis was calculated with six-factors. This model reached a KMO of 0.915 and coverage of 60.5% of the variation. KMO is unaffected by the number of factors and remains at a high level of 0.915. Total explained variance drops only slightly from 60.5% to 56.8%, indicating that a five-factor-solution does not miss much information compared to the previous solution with one additional factor. This is the reason why the author kept on working with the five-factor solution. The Principal Component Analysis (PCA) was used for extraction and varimax for rotation.

The results corresponded well to the expected scales of general and specific readiness for change (sub concepts appropriateness, management support, self-efficacy and personally beneficial) with a few exceptions:

- Appropriateness seemed closely associated with personally beneficial due to the high factor loadings. This also counted for one item of management support ('I believe management has done a great job in bringing about this change.').
- 'What happens to me in the future depends on me.' loaded on personally beneficial rather than on general readiness for change
- 'I am intimidated by all the tasks I will have to learn because of this change.' loaded more strongly on management support and general readiness for change than on self-efficacy

Orthogonal varimax rotation again resulted in uncorrelated factors, making them suitable as independent variables for regression analysis.

### **Proof of the sub concepts formed out of the factor analysis**

Based on the results of the confirmatory factor analysis, the scales for general readiness for change and each sub concept of specific readiness for change self-efficacy, appropriateness, management support and personally beneficial were formed by averaging across the items. These scales were used for further calculations and delivered the results for the **Hypothesis 1**: General readiness for change is lower than specific readiness. The mean values and standard deviation of the general and specific readiness for change confirmed the hypothesis. The discussion about the result is described in Section 6.2. The details were as follows in Table 5.9.

**Table 5.9 General and specific readiness for change: Mean and standard deviation formed as a scale per sub concept**

	<b>General readiness for change</b>	<b>Specific readiness: Self-efficacy</b>	<b>Specific readiness: Appropriateness</b>	<b>Specific readiness: Management support</b>	<b>Specific readiness: Personally beneficial</b>
Mean	3.35	4.14	3.30	3.50	3.25
Std. Deviation	0.585	0.595	0.894	0.778	0.848
N	524	524	524	524	523

The correlation of the factor scores and scales calculated as means of items were high. Pearson's  $r$  is above 0.8 for general readiness and all sub concepts of specific readiness. The correlations were all significant. This indicated that both factor scores and means could be used for analysis. Factor scores were uncorrelated and therefore well suited as independent variables in regression analyses; while scales calculated as

means were more intuitive to interpret, and therefore well suited as dependent variables in regression analysis.

### **Independent sample t-test for the means per scale calculated per role**

Chapter 5 began with the analysis of the concept readiness for change level of civil servants and non-civil servants. Table 5.10 presents an overview of the mean values of general readiness for change and specific readiness for change due to the role in the organisation clustered in civil servants and non-civil servants. It confirmed the assumption of the **Hypothesis 2** that general and specific readiness for change of civil servants is significantly lower than the general and specific readiness for change of non-civil servants clustered into the readiness level of civil servants and non-civil servants.

**Table 5.10 General and specific readiness for change: Independent sample t-test per role**

Mean values	Civil servant	Non-civil servant	P value of difference
General readiness for change*	3.25	3.38	0.019
Specific readiness: Self-efficacy**	4.00	4.19	0.002
Specific readiness: Appropriateness**	3.12	3.36	0.006
Specific readiness: Management support	3.47	3.51	0.621
Specific readiness: Personally beneficial	3.16	3.28	0.148

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

The results of the independent sample t-test showed that general readiness for change was on the average slightly higher among non-civil servants (3.38) versus civil servants (3.25). This difference was statistically significant according to a t-test for independent samples ( $p=0.019$ ). Using the t-tests for independent samples, it was found and significantly confirmed that non-civil servants are more ready for change than civil servants in terms of self-efficacy ( $p=0.002$ ) and appropriateness ( $p=0.006$ ), but not in their views of management support ( $p=0.621$ ) and personally beneficial ( $p=0.148$ ).

However, further influencing concepts were also calculated.

### **Correlation models: control variables and readiness for change**

Beside the usability of the concepts and underlying models of readiness for change e.g. Oreg (2003), the author calculated the influence of control variables such as

change impact, job satisfaction, turnover intention, exploited potential and organisational commitment on general and specific readiness for change (Table 5.11).

**Table 5.11 General and specific readiness for change: Correlations of control variables**

		Change impact		Job satisfaction	Turnover intention	Exploited potential	Organisational commitment		
		The change had a major positive impact on my job and my job conditions.	The change had a major negative impact on my job and my job conditions.	I am highly satisfied with my job.	I will work for the DB in five years from now.	I am able to unfold my individual potential performance in my job.	I like working for the DB very much.	My identification with the DB AG has positively changed during my employment.	My identification with the DB AG has negatively changed during my employment.
General readiness for change	Pearson Correlation Sig. (2-tailed) N	<b>0.266**</b> <0.001 519	<b>-0.244**</b> <0.001 517	<b>0.092*</b> 0.041 491	0.029 0.512 504	0.064 0.158 489	<b>0.103*</b> 0.023 490	<b>0.109*</b> 0.013 519	<b>-0.170**</b> <0.001 520
Specific readiness: Self-efficacy	Pearson Correlation Sig. (2-tailed) N	<b>0.286**</b> <0.001 519	<b>-0.454**</b> <0.001 517	<b>0.356**</b> <0.001 491	<b>0.092**</b> 0.000 504	<b>0.317**</b> <0.001 489	<b>0.324**</b> <0.001 490	<b>0.248**</b> <0.001 519	<b>-0.330**</b> <0.001 520
Specific readiness: Appropriateness	Pearson Correlation Sig. (2-tailed) N	<b>0.469**</b> <0.001 519	<b>-0.531**</b> <0.001 517	<b>0.343**</b> <0.001 491	<b>0.204**</b> 0.001 504	<b>0.349**</b> <0.001 489	<b>0.290**</b> <0.001 490	<b>0.381**</b> <0.001 519	<b>-0.408**</b> <0.001 520
Specific readiness: Management support	Pearson Correlation Sig. (2-tailed) N	<b>0.223**</b> <0.001 519	<b>-0.378**</b> <0.001 517	<b>0.321**</b> <0.001 491	<b>0.163**</b> 0.001 504	<b>0.311**</b> <0.001 489	<b>0.276**</b> <0.001 490	<b>0.316**</b> <0.001 519	<b>-0.327**</b> <0.001 520
Specific readiness: Personally beneficial	Pearson Correlation Sig. (2-tailed) N	<b>0.666**</b> <0.001 518	<b>-0.506**</b> <0.001 516	<b>0.397**</b> <0.001 490	<b>0.150**</b> 0.001 504	<b>0.437**</b> <0.001 488	<b>0.329**</b> <0.001 489	<b>0.411**</b> <0.001 518	<b>-0.412**</b> <0.001 519

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

The control variables change impact, job satisfaction, turnover intention, exploited potential and organisational commitment showed significant correlation results. The change impact correlated strongly with appropriateness (specific readiness) and personally beneficial (specific readiness). Also job satisfaction and exploited potential displayed high positive and significant correlations with all concepts of specific readiness for change.

### 5.2.3 Validation of the data: concept Person-Organisation and Person-Job fit

The Appendix A Questionnaire presents the items of the scale which formed the P-O fit and P-J fit. The mean values, the correlations, the standard deviation and the Cronbach's alpha for the P-O fit and P-J fit concepts were calculated (Table 5.12):

**Table 5.12 Person-Organisation and Person-Job fit: Overview descriptive statistics results**

Concept	Mean value	Correlations	Standard deviation	Cronbach's alpha
Person-organisation fit	3.72 - 3.77	0.80	0.955 - 0.965	0.89
Person-job fit	3.62 - 3.95	0.66 - 0.79	0.952 - 1.034	0.88

Comparing the means of each scale of P-O and P-J fit, they were well above the middle of the scale, indicating that positive ratings (agreement) outweigh negative and neutral ratings. The reliability of the scales is confirmed.

#### **5.2.4 Supplementary bivariate and multivariate analyses: concepts Person-Organisation fit and Person-Job fit**

The results of the concepts P-O fit and P-J fit delivered answers for the second research objective: To analyse and explore the concept of P-E fit and the sub concepts and the **Hypotheses 3 and 4**. The hypothesis 3 will be answered in Section 5.2.9 with the help of a stepwise regression for all used items in the study. Before starting with the calculation, all concepts used in the study shell be presented before.

The calculation methods used in this study were correlations and regressions.

#### **Correlation: P-O fit, P-J fit and role in the organisation**

The correlations between P-O fit and readiness for change due to the role in the organisation is calculated to answer the **Hypothesis 4**: Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.

**Table 5.13 Person-Organisation fit and readiness for change per role in organisation: Correlation**

	Civil servant <sup>a</sup>		Non-civil servant <sup>b</sup>	
	Pearson Correlation	Sig. (2-tailed)	Pearson Correlation	Sig. (2-tailed)
General readiness for change	<b>0.201<sup>*</sup></b>	0.018	0.038	0.453
Specific readiness: Self-efficacy	<b>0.379<sup>**</sup></b>	<0.001	<b>0.317<sup>**</sup></b>	<0.001
Specific readiness: Appropriateness	<b>0.401<sup>**</sup></b>	<0.001	<b>0.357<sup>**</sup></b>	<0.001
Specific readiness: Management support	<b>0.348<sup>**</sup></b>	<0.001	<b>0.368<sup>**</sup></b>	<0.001
Specific readiness: Personally beneficial	<b>0.518<sup>**</sup></b>	<0.001	<b>0.392<sup>**</sup></b>	<0.001

<sup>\*</sup>. significant at the 0.05 level (2-tailed).

<sup>\*\*</sup>. significant at the 0.01 level (2-tailed).

a. N = 138  
b. N = 386

As Table 5.13 clearly shows, all correlations concerning the civil servants were significant. Especially the factor personally beneficial and civil servants correlated very strongly. Further results show that personally beneficial plays an important role for civil servants in comparison to the other three sub concepts and general readiness for change. The association of general readiness for change and P-O fit was the weakest of the five.

The results for the non-civil servants differed slightly. The scale general readiness for change did not correlate with P-O fit. The four aspects of specific readiness for change correlated more strongly with P-O fit. All of these aspects were also significant ( $p < 0.0005$ ). The sub concept personally beneficial correlated most strongly with P-O fit at Pearson's  $r = 0.392$ .

The correlations between P-J fit and readiness for change are shown on Table 5.14:

**Table 5.14 Person-Job fit and readiness for change per role in the organisation: Correlation**

	Civil servant <sup>a</sup>		Non-civil servant <sup>b</sup>	
	Pearson Correlation	Sig. (2-tailed)	Pearson Correlation	Sig. (2-tailed)
General readiness for change	0.166	0.052	0.047	0.353
Specific readiness: Self-efficacy	<b>0.391**</b>	<0.001	<b>0.302**</b>	<0.001
Specific readiness: Appropriateness	<b>0.340**</b>	<0.001	<b>0.294**</b>	<0.001
Specific readiness: Management support	<b>0.301**</b>	<0.001	<b>0.273**</b>	<0.001
Specific readiness: Personally beneficial	<b>0.523**</b>	<0.001	<b>0.311**</b>	<0.001

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

a. N = 138

b. N = 386

Among civil servants, the correlation between P-J fit and general readiness for change was weak and narrowly missed the threshold for statistical significance (Pearson's  $r = 0.17$ ,  $p = 0.052$ ). However, P-J fit was positively correlated to all four aspects of specific readiness for change ( $p < 0.001$ , Pearson's  $r$  between 0.30 and 0.52), but not correlated to general readiness for change. Again, personally beneficial showed the strongest correlation (Pearson's  $r = 0.52$ ).

For non-civil servants, the results were very similar. P-J fit did not correlate to general readiness for change (Pearson's  $r = 0.05$ ,  $p = 0.35$ ), but was positively associated with all four aspects of specific readiness for change ( $p < 0.001$ , Pearson's  $r$  between 0.27 and 0.31).

The hypothesis is partly confirmed and the discussion is presented in Section 6.3.

**5.2.5 Validation of the data: concept Public Service Motivation**

In this Section, the third research objective “To analyse the concept of Public Service Motivation” and the derived **Hypotheses 5** and **6** will be answered.

As described in Section 4.4.5, the PSM concept was divided into four sub concepts: policy-making, public interest, compassion and self-sacrifice. Again, several items were formulated in a negative sense, with high agreement indicating a negative view on policy-making. These items were recoded so that higher values corresponded to a more positive view.

Each sub concept was calculated in detail, individually and in combination. Additionally, a factor analysis and a test for normal distribution were carried out.

**Public Service Motivation**

The concept Public Service Motivation embraces four concepts: policy-making, public interest, compassion and self-sacrifice. Each of these concepts consists of several items (Appendix A Questionnaire), The descriptive statistics which includes each scale per PSM concepts are shown in Table 5.15.

**Table 5.15 Public Service Motivation policy-making: Overview descriptive statistics results**

Concept	Sub concept	Mean value	Correlations	Standard deviation	Cronbach's alpha
Public Service Motivation	Policy making	2.90 - 3.43	0.25 - 0.56	0.988 - 1.157	0.72
	Public interest	3.04 - 4.45	0.07 - 0.42	0.781 - 1.170	0.58
	Compassion	2.83 - 3.65	0.17 - 0.32	0.858 - 1.020	0.49
	Self-sacrifice	2.92 - 3.34	0.33 - 0.50	0.814 - 0.919	0.78

The results of descriptive statistics confirmed the use of the scales through the reliability. The Cronbach's alpha of the public interest 0.58 and compassion 0.49 were comparatively low. 17 items formed the total measurement scale of PSM.

**Factor analysis: PSM items to form sub concepts**

Factor analysis was applied to the 17 items of PSM to reduce the variables and to categorise them (Table 5.16). The further calculations are based on these categories. This is the reason, why the factor analysis is done at this point of the data analysis



process. According to the KMO-criterion, the sample is well suited for factor analysis (KMO=0.822) (Backhaus *et al.* 2011). The PCA was used for the extraction. The number of factors was determined using Eigenvalues > 1. Four factors resulted, accounting for 52% of the variance of the original items. The varimax rotation was applied to make results easier to interpret; i.e. items can be more easily assigned to a specific factor after rotation.

**Table 5.16 Public Service Motivation: Factor analysis**

	Rotated Component Matrix <sup>a</sup>			
	Self-sacrifice	Policy-making	Public interest	Compassion
<b>Policy-making</b> Politics is a dirty word. The compromises that are involved in the public policy-making don't appeal to me. I don't care much for politicians. I associate politics with something positive.	0.182	<b>0.813</b> <b>0.632</b> <b>0.649</b> <b>0.775</b>		0.208
<b>Public interest</b> I consider public service a civic duty. I unselfishly contribute to my community. Meaningful public service is very important to me. I would prefer seeing public officials do what is best for the whole community, even if it harmed my interests. An official's obligation to the public should always come before loyalty to superiors.	0.386 <b>0.530</b> 0.109 0.112	0.114 0.220  	<b>0.571</b> 0.149 <b>0.619</b> <b>0.746</b> <b>0.734</b>	0.121
<b>Compassion</b> I have little compassion for people in need who are unwilling to take the first step themselves. It is difficult for me to contain my feelings when I see people in distress. I seldom think about the welfare of people I don't know personally.	 0.250 0.144	0.246 -0.127 0.121		<b>0.677</b> <b>0.586</b> <b>0.745</b>
<b>Self-sacrifice</b> Making a difference in society means more to me than personal achievements. I feel people should give back more than they get. I am a person who would risk personal loss to help someone else. I believe in putting civic duty before self. I am prepared to make sacrifices for the good of society.	<b>0.729</b> <b>0.694</b> <b>0.635</b> <b>0.746</b> <b>0.552</b>	  -0.112  0.223	   0.180	0.192  0.401 0.131 0.426

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalisation.  
a. Rotation converged in 6 iterations.

The results, shown in Table 5.16 confirmed the original scales very well. Factor 1 was labelled self-sacrifice, factor 2 corresponds to policy-making, factor 3 represented public interest and factor 4 referred to compassion.

### Proof of the sub concepts formed out of the factor analysis

Based on the results of the factor analysis, the scales for each sub concept policy-making, public interest, compassion and self-sacrifice were formed by averaging

across the items. The mean values, standard deviation and median of the general and specific readiness for change were as follows in Table 5.17.

**Table 5.17 Public Service Motivation: Report Overview**

	<b>PSM: Policy- making</b>	<b>PSM: Public interest</b>	<b>PSM: Compassion</b>	<b>PSM: Self-sacrifice</b>
Mean	3.09	3.74	3.35	3.16
Std. Deviation	0.765	0.583	0.672	0.626
N	520	521	522	522

The highest mean reached public interest (3.74) and compassion (3.35).

The correlation between the factor scores and scales calculated as means of items were high. Pearson's  $r$  is above 0.9 for all categories: policy-making 0.98, public interest 0.88, compassion 0.94 and self-sacrifice 0.94. The results were all significant. This indicated that both factor scores and means could be used for analysis.

### **5.2.6 Supplementary bivariate and multivariate analyses: concept Public Service Motivation**

The **Hypothesis 5:** Public Service Motivation of civil servants is significantly higher than the Public Service Motivation of non-civil servants is answered in this section. Table 5.18 presents the differences by role in the organisation concerning the PSM, summed up as civil servants versus non-civil servants.

**Table 5.18 Public Service Motivation and role in the organisation: Independent sample t-test**

<b>Mean values</b>	<b>Civil servant</b>	<b>Non-civil servant</b>	<b>P value of difference</b>
PSM: Policy-making	3.18	3.05	0.086
PSM: Public interest*	<b>3.83</b>	<b>3.71</b>	0.039
PSM: Self-sacrifice	3.19	3.15	0.456
PSM: Compassion	3.39	3.34	0.426

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

As stated above, not many differences were visible concerning the results of the mean values clustered according to the role in the organisation. Civil servants (3.19) reported a higher mean value concerning policy-making compared to non-civil servants (3.05). This was followed by the sub concept public interest with a mean value of 3.83 for civil servants and 3.71 for non-civil servants.

Table 5.19 Public Service Motivation and role in the organisation: Independent sample t-test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
PSM: Policy-making	0.713	0.399	1.720	518	0.086	0.131	0.076	-0.019	0.280
PSM: Public interest*	0.015	0.903	2.073	519	0.039	<b>0.120*</b>	0.058	0.006	0.233
PSM: Self-sacrifice	0.023	0.879	0.746	520	0.456	0.046	0.062	-0.076	0.169
PSM: Compassion	0.012	0.914	0.797	520	0.426	0.053	0.067	-0.078	0.184

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

According to the t-tests for independent samples (Table 5.19), the only significant difference between civil servants and non-civil servants in terms of PSM applied to public interest ( $p=0.039$ ). The **Hypothesis 5** is partly confirmed and a detailed discussion about the results is found in Section 6.4.

#### Excuse: Antecedents of PSM calculated with a regression

Due to the fact, that PSM was measured for the first time in Germany, the influencing factors on PSM were calculated. The regression model was calculated with the variables role, leadership, gender and age for each sub concept of PSM.

An example of the regression model is shown at Table 5.20. The results of the regression showed no significant effects on policy-making.

Table 5.20 Public Service Motivation policy making: Regressions calculated for two models

Dependent Variable: Policy-making			
Independent Variables	Regression coefficient B	Standardised Beta coefficient	p-value (Sig.)
Constant	3.021	-	<0.0005
Role: civil servant	0.108	0.062	0.236
Role: leadership	0.045	0.024	0.593
Gender: female	-0.078	-0.049	0.278
Age	0.015	0.020	0.708
Adj. R square	0.002		
N	520		

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

The same was done with the sub concepts public interest, self-sacrifice and compassion. The results are shown in a short version.

The regression for public interest did not hold any significance when controlled for role, leadership and gender, but for age (Table 5.21). When age increased by one category, public interest rose by 0.063 scale units. Adjusted R square (0.012) showed a lack of accuracy as it only accounted for 1.2% in variation of public interest.

**Table 5.21 Public Service Motivation public interest: Regressions calculated for two models**

<b>Dependent Variable: Public interest</b>			
<b>Independent Variables</b>	<b>Regression coefficient B</b>	<b>Standardised Beta coefficient</b>	<b>p-value (Sig.)</b>
Constant	3.516	-	<0.0005
Age	<b>0.063*</b>	0.108	0.037
Adj. R square	0.012		
N	521		

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

The regression for the sub concept self-sacrifice did not deliver any results.

Finally looking at compassion, only age has a significant impact on compassion. The older the respondents were, the higher the compassion. Adjusted R square was again very low at 0.008, which means that the model accounted for 0.8% of the variation in compassion (Table 5.22).

**Table 5.22 Public Service Motivation compassion: Regressions calculated for two models**

<b>Dependent Variable: Compassion</b>			
<b>Independent Variables</b>	<b>Regression coefficient B</b>	<b>Standardised Beta coefficient</b>	<b>p-value (Sig.)</b>
Constant	3.025	-	<0.0005
Age	<b>0.078*</b>	0.116	0.026
Adj. R square	0.008		
N	522		

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

### **Relationship: PSM and readiness for change**

To answer the **Hypothesis 6:** Public Service Motivation has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants, the correlations and regressions of PSM and readiness for change for civil servants and non-civil servants were computed.

The regression should validate the correlation results. Table 5.23 shows the correlations for civil servants:

**Table 5.23 Readiness for change and PSM: Correlations for civil servants**

Role = civil servant		General readiness for change	Specific readiness: Self-efficacy	Specific readiness: Appropriateness	Specific readiness: Management support	Specific readiness: Personally beneficial
PSM: Policy-making <sup>a</sup>	Pearson Correlation	<b>0.174*</b>	0.153	<b>0.172*</b>	0.152	0.137
	Sig. (2-tailed)	0.042	0.074	0.044	0.076	0.112
PSM: Public interest <sup>b</sup>	Pearson Correlation	-0.092	0.048	-0.123	-0.082	0.014
	Sig. (2-tailed)	0.285	0.575	0.151	0.339	0.869
PSM: Self-sacrifice <sup>b</sup>	Pearson Correlation	0.054	0.078	0.081	0.022	<b>0.204*</b>
	Sig. (2-tailed)	0.532	0.364	0.344	0.799	0.017
PSM: Compassion <sup>b</sup>	Pearson Correlation	0.077	-0.035	-0.130	-0.142	-0.098
	Sig. (2-tailed)	0.370	0.688	0.129	0.097	0.253

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

a. N=137

b. N=138

Since there were five aspects of readiness for change and four aspects of PSM, the hypotheses comprised a total of 20 correlations. Only three of them were statistically significant:

- Self-sacrifice correlated positively with personally beneficial (Pearson's  $r=0.204$ ,  $p=0.017$ )
- Policy-making was positively correlated with general readiness for change (Pearson's  $r=0.174$ ,  $p=0.042$ ) and
- Policy-making was also positively correlated with appropriateness (Pearson's  $r=0.172$ ,  $p=0.044$ ).

Except for the first correlation mentioned above, all other coefficients were much smaller than 0.2. So overall, the hypothesis concerning the impact of the PSM of civil servants on readiness for change is not supportively answered by the empirical results.

**Table 5.24 Readiness for change and Public Service Motivation: Correlations for non-civil servants**

Role: non-civil servant		General readiness for change	Specific readiness: Self-efficacy	Specific readiness: Appropriateness	Specific readiness: Management support	Specific readiness: Personally beneficial
PSM: Policy-making <sup>a</sup>	Pearson Correlation	<b>0.159**</b>	0.055	0.017	0.062	0.084
	Sig. (2-tailed)	0.002	0.284	0.743	0.223	0.102
PSM: Public interest <sup>a</sup>	Pearson Correlation	0.027	<b>0.101*</b>	-0.092	0.050	-0.090
	Sig. (2-tailed)	0.593	0.048	0.073	0.327	0.078
PSM: Self-sacrifice <sup>b</sup>	Pearson Correlation	<b>0.128*</b>	<b>0.128*</b>	-0.013	0.050	<b>0.104*</b>
	Sig. (2-tailed)	0.012	0.012	0.804	0.328	0.043
PSM: Compassion <sup>b</sup>	Pearson Correlation	0.003	0.021	-0.052	0.018	-0.011
	Sig. (2-tailed)	0.951	0.676	0.313	0.730	0.826

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

a. N=383

b. N=384

The results for non-civil servants in Table 5.24 were similar to the results in Table 5.23; all correlation coefficients were below 0.2. However, five correlations were statistically significant, three of them involving self-sacrifice.

### Regression of the concepts readiness for change and Public Service Motivation

Regression models enable the researcher to control for various effects and thereby detect spurious correlations or hidden correlations. The dependent variables tested in sequence were all items of PSM and readiness for change.

First of all, the dependent variable general readiness for change was tested starting with the civil servants. As seen in Table 5.25, a significant result was calculated for the concept personally beneficial (specific readiness) and self-sacrifice (PSM). No further significances were calculated (see Appendix C Regressions for civil servant; Appendix D Regressions for non-civil servants).

**Table 5.25 Public Service Motivation and specific readiness personally beneficial: Regressions for civil servants**

Dependent variable Specific readiness: Personally beneficial		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	0.071	0.081	0.340
	Public interest	-0.033	-0.038	0.660
	Self-sacrifice	<b>0.201*</b>	0.239	0.006
	Compassion	-0.037	-0.045	0.608

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

Adj. R square 0.097

a. N=130

The same regression calculation was done for the non-civil servants (Table 5.26; Table 5.27; Table 5.28) and significant results of non-civil servants were calculated for:

- **Policy-making (PSM) and general readiness for change**
- **Self-sacrifice (PSM) and self-efficacy (specific readiness)**
- **Self-sacrifice (PSM) and personally beneficial (specific readiness)**

**Table 5.26 Public Service Motivation and general readiness for change: Regressions for non-civil servants**

Dependent variable General readiness for change		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	<b>0.054**</b>	0.100	0.050
	Public interest	0.003	0.006	0.905
	Self-sacrifice	0.051	0.091	0.056
	Compassion	-0.015	-0.027	0.569

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

Adj. R square 0.195

a. N=360

**Table 5.27 Public Service Motivation and specific readiness: self-efficacy: Regressions for non-civil servants**

Dependent variable Specific readiness: Self-efficacy		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	-0.006	-0.011	0.841
	Public interest	0.042	0.077	0.135
	Self-sacrifice	<b>0.076*</b>	0.136	0.008
	Compassion	-0.011	-0.020	0.693

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

Adj. R square 0.065

a. N=360



**Table 5.28 Public Service Motivation and specific readiness: personally beneficial: Regressions for non-civil servants**

Dependent variable: Specific readiness: Personally beneficial		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	0.022	0.027	0.594
	Public interest	-0.066	-0.079	0.106
	Self-sacrifice	<b>0.118*</b>	0.138	0.005
	Compassion	-0.012	-0.014	0.768

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

Adj. R square 0.164

a. N=360

Out of the results, one correlation and regression result between PSM and readiness for change can be confirmed for civil servants and non-civil servants: self-sacrifice (PSM) and self-efficacy (specific readiness).

The **Hypothesis 6** is rejected by the results of the correlations and regressions. Section 6.4 discusses the findings.

### 5.2.7 Validation of the data: concept need for security

The **fourth research objective**: To prove the concept of need for security, the **Hypothesis 7**: Need for security is significantly higher of civil servants than of non-civil servants and **Hypothesis 8**: Need for security has a significantly higher impact on specific readiness for change than on general readiness for change are answered by the calculation of the concept need for security. Need for security was measured with four items. For the descriptive statistics see Table 5.29.

**Table 5.29 Need for security: Overview descriptive statistics results**

Concept	Mean value	Correlations	Standard deviation	Cronbach's alpha
Need for security	2.30 - 4.17	0.17 - 0.56	0.879 - 1.168	0.69

With the help of the mean value of over 3.5 (3.56) in Table 5.30, it is proven that the civil servants display a higher need for security. The result of the independent sample t-test is significant (p=0.031).

**Table 5.30 Need for security: Independent sample t-test**

	Civil servant <sup>a</sup>	Non-civil servant <sup>a</sup>
Mean	3.56	3.41
St. Deviation	0.663	0.751
P value of difference	<b>0.031*</b>	

\*, significant at the 0.05 level (2-tailed).

a. 138

b. 386

The **Hypothesis 7** is supported and the results are discussed in Section 6.5.

### **Excuse: Independent sample t-test for the means of need for security per age group and role**

It is supposed that age plays an important role in the study. This is the reason, why this excuse is calculated. While the differences of the mean value of civil servants and non-civil servants are significant, the age group appears to have no further significance in the calculation of the t-test. This refers partly to the low number of cases, especially for the age group of 41 to 50 years and over 60 years. The detailed results are shown in Appendix E .

### **5.2.8 Supplementary bivariate and multivariate analyses: concept need for security**

The correlations between need for security and all concepts of readiness for changes were calculated and it was shown to have significant results, except for management support (Table 5.31).

**Table 5.31 Need for security: Correlations general and specific readiness for change**

	<b>General readiness for change<sup>a</sup></b>	<b>Specific readiness: Self-efficacy<sup>a</sup></b>	<b>Specific readiness: Appropriateness<sup>a</sup></b>	<b>Specific readiness: Management support<sup>a</sup></b>	<b>Specific readiness: Personally beneficial<sup>a</sup></b>
Pearson-Correlation	<b>-0.395**</b>	<b>-0.205**</b>	<b>-0.146**</b>	-0.082	<b>-0.225**</b>
Sig. (2-tailed)	<0.001	<0.001	0.001	0.061	<0.001

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

a. N=524

### **Excuse: Antecedents of need for security**

To find out about antecedents of need for security, a regression concerning age and gender shown in Table 5.32 is calculated. It revealed that woman displayed a significantly higher need for security than men. Need for security rises with age. All age groups above 30 years report a stronger need for security compared to the reference group aged 21 to 30, however the difference is significant only for respondents older than 50.

Table 5.32 Need for security: Regression age and gender

Dependent Variable: Need for security <sup>a</sup>			
Independent Variables	Regression coefficient B	Standardised Beta coefficient	p-value (Sig.)
Female	<b>0.218**</b>	0.143	0.001
31 to 40 years	0.183	0.112	0.127
41 to 50 years	0.138	0.090	0.237
51 to 60 years	<b>0.400**</b>	0.237	0.001
Over 60 years	<b>0.493*</b>	0.113	0.023
Constant	3.157	-	<0.001
Adj. R square	0.034		
N	524		

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

### 5.2.9 Multivariate analyses: stepwise regression of the concept readiness for change

Due to the search for influencing items on all readiness for change concepts, a further analysis step was taken. This final calculation is placed at the end of the analysis because it embraces all presented concepts. It calculated the significant influence of all concepts and sub concepts on readiness for change.

In order to reduce multi-collinearity, a gradual regression approach was used to determine which controls can be used together in one model. Criteria for including or excluding variables are based on F-test probabilities; thresholds are 0.05 for inclusion and 0.1 for exclusion. The items for all concepts such as P-O fit, P-J fit, PSM, need for security, control and demographic variables were tested.

The results showed several significant influencing items and answered the **Hypothesis 3** and **8**. Starting with the **Hypothesis 3**: Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on specific readiness for change than on general readiness for change: the hypothesis was confirmed. The discussion about the result is followed in Section 5.3. The results also supported the **Hypothesis 8**: Need for security has a significantly higher impact on specific readiness for change than on general readiness for change, interpreted in Section 5.5.

The calculation for the stepwise regression started with general readiness for change (Table 5.33). The stepwise regression was calculated for general and each specific readiness for change concept. In order to achieve clarity in the presentation of the calculation, the results of the stepwise regression for specific readiness for change concepts are reduced to the significant results for each concept.

**Table 5.33 General readiness for change and all variables: Stepwise regression**

<b>Dependent Variable: General readiness for change</b>			
<b>Independent Variables<sup>a</sup></b>	<b>Regression coefficient B</b>	<b>Standardised Beta coefficient</b>	<b>p-value (Sig.)</b>
Constant	4,094	-	<0,001
Civil servant	-0,090	-0,068	0,158
Leadership	0,049	0,035	0,403
Female	-0,035	-0,028	0,498
Age***	0,013	0,022	0,654
Person-organization-fit	-0,010	-0,016	0,764
Person-job-fit	0,005	0,008	0,883
<b>PSM: Policy making</b>	<b>0,061*</b>	<b>0,105</b>	<b>0,011</b>
PSM: Public interest	-0,008	-0,014	0,735
PSM: Self sacrifice	0,032	0,054	0,18
PSM: Compassion	0,009	0,015	0,707
<b>Need for security</b>	<b>-,269**</b>	<b>-0,342</b>	<b>&lt;0,001</b>
<b>Change: Positive impact</b>	<b>,090**</b>	<b>0,195</b>	<b>&lt;0,001</b>
<b>Change: Negative impact</b>	<b>-,048*</b>	<b>-0,100</b>	<b>0,035</b>
Adj. R square	0.233		
N	481		

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

\*\*\*. Strong correlation with tenure

The resulting model (Table 5.33) included both items relating to change impact: major positive and major negative impact on job and job conditions. While these two items were indeed correlated ( $r=-0.409$ ), they did not fully supplement each other. The positive and negative impacts determined each other for some respondents, but not for all. Some respondents see both positive and negative impact while most respondents agreed to one statement and disagreed to the other.

Policy-making is the only PSM sub concept which has a significant influence on readiness for change.

Need for security has the highest negative impact on general readiness for change.

The stepwise approach for the regression was also used for the sub concepts of specific readiness for change. SPSS presented several models for each dependent variable with one additional variable in each step. Only the final models are presented in this upcoming section. The order of independent variables in the tables corresponds to the order of selection.

**Table 5.34 Specific readiness for change self-efficacy and all variables: Stepwise regression**

<b>Dependent Variable: Specific readiness for change: Self-efficacy</b>			
<b>Independent Variables<sup>a</sup></b>	<b>Regression coefficient B</b>	<b>Standardised Beta coefficient</b>	<b>p-value (Sig.)</b>
Constant	4.298**	-	<0.0005
Change: Major negative impact	<b>-0.160**</b>	-0.327	<0.0005
Need for security	<b>-0.132**</b>	-0.162	<0.0005
Person-Job fit	<b>0.100**</b>	0.147	0.005
Person-Organisation fit	<b>0.084*</b>	0.129	0.014
Role: civil servant	<b>-0.123*</b>	-0.090	0.023
PSM: public interest	<b>0.049*</b>	0.082	0.036
Adj. R square	0.281		
N	481		

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

a. The following variables were tested, but not included: leadership position, tenure, gender, age, PSM: policy-making, PSM: self-sacrifice, PSM: compassion, Change: major positive impact, demographic variables, control variables

The most influential item in the regression model of specific readiness: self-efficacy in Table 5.34 was Change: major negative impact. Both P-O fit and P-J fit were included. Role was significantly negative in this model. Opposed to general readiness for change, the item need for security was included in the model, but it did not exert the strongest effect. Again age, gender and most of the PSM sub concepts were not included.

**Table 5.35 Specific readiness for change appropriateness and all variables: Stepwise regression**

<b>Dependent Variable: Specific readiness for change: Appropriateness</b>			
<b>Independent Variables</b>	<b>Regression coefficient B</b>	<b>Standardised Beta coefficient</b>	<b>p-value (Sig.)</b>
Constant	2.675**	-	<0.0005
Change: Major negative impact	<b>-0.256**</b>	-0.351	<0.0005
Change: Major positive impact	<b>0.192**</b>	0.271	<0.0005
Person-Organisation fit	<b>0.169**</b>	0.175	<0.0005
Adj. R square	0.380		
N	481		

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

a. The following variables were tested, but not included: role, leadership position, tenure, gender, age, Person-Job fit, PSM: policy-making, PSM: public interest, PSM: self-sacrifice, PSM: compassion, need for security, demographic variables, control variables

The positive and negative change impact items were significant, as seen in Table 5.35. It seemed both items played an important role concerning the specific readiness for change. Also P-O fit was significant. Role, age, gender and PSM were not of relevance for the model.

**Table 5.36 Specific readiness for change management support and all variables: Stepwise regression**

<b>Dependent Variable: Specific readiness for change: Management support</b>			
<b>Independent Variables</b>	<b>Regression coefficient B</b>	<b>Standardised Beta coefficient</b>	<b>p-value (Sig.)</b>
Constant	3.066**	-	<0.0005
Change: Major negative impact	<b>-0.181**</b>	-0.284	<0.0005
Person-Organisation fit	<b>0.229**</b>	0.271	<0.0005
Adj. R square	0.206		
N	481		

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

a. The following variables were tested, but not included: role, leadership position, tenure, gender, age, Person-Job fit, PSM: policy-making, PSM: public interest, PSM: self-sacrifice, PSM: compassion, need for security, Change: major positive impact, demographic variables, control variables

Only two items showed significant results in the regression model of specific readiness: management support in Table 5.36 change impact: negative and P-O fit. Again, demographics and PSM items were not important.

**Table 5.37 Specific readiness for change personally beneficial and all variables: Stepwise regression**

Dependent Variable: Specific readiness for change: Personally beneficial			
Independent Variables	Regression coefficient B	Standardised Beta coefficient	p-value (Sig.)
Constant	2.633**	-	<0.0005
Change: Major positive impact	<b>0.322**</b>	0.473	<0.0005
Person-Organisation fit	<b>0.153**</b>	0.165	<0.0005
Change: major negative impact	<b>-0.115**</b>	-0.164	<0.0005
Need for security	<b>-0.155**</b>	-0.133	<0.0005
Age	<b>-0.135**</b>	-0.158	<0.0005
PSM: self-sacrifice	<b>0.083**</b>	0.097	0.001
Leadership position	<b>0.220**</b>	0.106	0.001
Role: civil servant	<b>0.148*</b>	0.076	0.032
Person-Job fit	<b>0.076*</b>	0.078	0.049
Adj. R square	0.587		
N	480		

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

a. The following variables were tested, but not included: tenure, gender, PSM: policy-making, PSM: public interest, PSM: compassion, demographic variables, control variables

The model of specific readiness: personally beneficial displayed many significant and relevant items (Table 5.37). Again, the two items concerning change impact correlated significantly with personally beneficial. The role of being a civil servant was positive and significant. For the first time, the items age and leadership were of importance. The impact of need for security and PSM: self-sacrifice was obvious.

The items change: major negative impact and P-O fit correlated with all general and specific readiness for change items. The focus of the study was on the discussion about the relevance of role. Only for self-efficacy and personally beneficial was the role of civil servants significantly relevant.

The regression of the independent variable need for security and the dependent variables of general and specific readiness for change displayed significant results for the variables general readiness, self-efficacy and personally beneficial (both specific readiness for change) (Table 5.33, Table 5.34, Table 5.35, Table 5.36, Table 5.37Fehler! Verweisquelle konnte nicht gefunden werden.). The results supported the **Hypothesis 8**: Need for security has a significantly higher impact on specific readiness for change than on general readiness for change are answered by the

calculation of the concept need for security interpretation of the results is presented in Section 6.5.

### **5.3 Chapter summary**

This chapter presented the results of the survey conducted in March 2013 by the author at the headquarters of the DB AG. Out of the 2,504 questionnaires that were sent out, 524 were completed which was a response rate of 20.9%. In accordance with the research philosophy positivism, the data was analysed in a typically quantitative way starting with the descriptive analysis which included the formation of the scales to reduce the amount of items per concept, the reliability test, the calculation of the mean values and standard deviation. This was followed by the calculation of the normal distribution and a factor analysis for the all topics of readiness for change and PSM. As it might be necessary for the interpretation of the study, the correlation and regression were also calculated.

Using the structure of the literature review, the research objectives and hypotheses stated in Chapter 2 concerning the topic readiness for change, P-O fit and P-J fit, PSM and need for security were answered accordingly.

### **Readiness for change**

The results of the means for the general readiness for change displayed a significantly higher readiness for change level of non-civil servants than of civil servants. The specific readiness for change confirmed the results of a different readiness level regarding the sub concepts self-efficacy and appropriateness.

Further influencing demographic factors such as age and gender resulted in a lower readiness for change for older individuals and for women. The control variables (change impact, job satisfaction, turnover intention, and exploited potential and organisational commitment) had a high correlation over almost all variables. Especially the impact of change showed highly significant results.

The stepwise regression presents significant results of a lower readiness for change in civil servants for the sub concept specific readiness: self-efficacy and a higher readiness for change for specific readiness: personally beneficial. Further influencing and significant factors on general and specific readiness for change were the change impact (negative), which confirmed the results of the correlations.



### **Person-Organisation fit and Person-Job fit**

Concerning the relation between the P-O fit and P-J fit, it could be summarised that the P-O fit and P-J fit are not correlated to the general readiness for change among non-civil servants. Civil servants displayed a correlation of the P-J fit, but not of the P-O fit.

All aspects of specific readiness for change were significantly and positively associated with P-O fit and P-J fit in both groups: civil servants and non-civil servants.

### **Public Service Motivation**

To answer the hypotheses concerning the topic of PSM, a t-test, correlations and regressions were used. The results of the t-tests confirmed a higher PSM for civil servants at the DB AG compared to non-civil servants but only for the sub concept public interest.

Only self-sacrifice (PSM) correlated significantly with personally beneficial (specific readiness for change) for civil servants and non-civil servants.

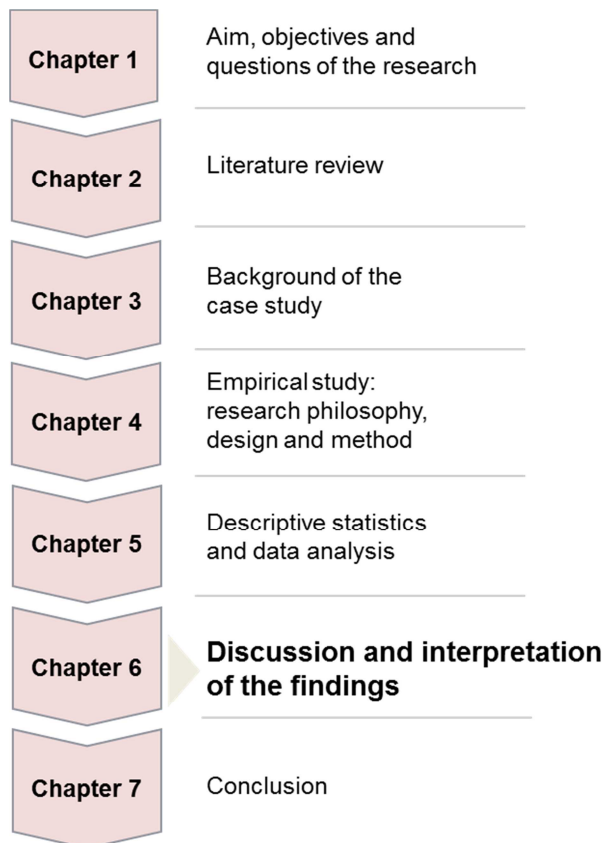
### **Need for security**

The need for security for women was higher than for men. Furthermore, the need for security for civil servants was significantly higher than the same need for non-civil servants and confirmed expectations. Civil servants seemed to be interested in secure job conditions and an environment combined with a low readiness for change level. All correlations with readiness for change showed a negative, significant result with the exception of management support, which was positively correlated. The regressions confirmed the significant results for general readiness for change, for self-efficacy and personally beneficial.

Further interpretation and discussion of the findings will be discussed in Chapter 6.

## 6 Discussion

Chapter 5 delivered the results of the survey conducted by the author at the headquarters of the DB AG in Frankfurt am Main, Germany. The results are the basis for Chapter 6. Chapter 6 discusses and interprets the findings and answers the research aim (Figure 6.1).



**Figure 6.1 Research process: Chapter 6**

### 6.1 Introduction

It is the aim of the study to develop and evaluate an instrument that can be used to gauge readiness for change on an individual level for civil servants and non-civil servants in the German public sector. The instrument should be based on existing readiness for change models.

Derived from the literature review, the research aim, research objectives and hypotheses were formulated (Table 6.1).

**Table 6.1 Overview of the research aims, research objectives and hypotheses**

Research aims	Research objectives	Hypotheses	
To develop and evaluate an instrument to gauge readiness for change on an individual level for civil servants and non-civil servants of the public sector in Germany.	To analyse and explore the relevant items of the existing concepts of readiness for change	1	General readiness for change is lower than the specific readiness.
		2	General and specific readiness for change of civil servants is significantly lower than the general and specific readiness for change of non-civil servants.
The instrument will be based on existing readiness for change models extended by the concept of Person-Environment fit.	To analyse the concept of Person-Environment fit and the sub concepts	3	Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on specific readiness for change than on general readiness for change.
		4	Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.
The concept of Public Service Motivation and the concept of need for security will be part of the instrument.	To analyse the concept of Public Service Motivation	5	Public Service Motivation of civil servants is significantly higher than the Public Service Motivation of non-civil servants.
		6	Public Service Motivation has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.
	To prove the concept need for security	7	Need for security is significantly higher of civil servants than of non-civil servants.
		8	Need for security has a significantly higher impact on specific readiness for change than on general readiness for change.

Briefly stated, the base of the quantitative research was a web-based questionnaire that was prepared and conducted by the author to gather quantitative data from 542 civil servants and non-civil servants at the DB AG. With the help of several quantitative calculation methods, the hypotheses were answered. The hypotheses led to the conclusion of the research objectives and finally to the answer of the research aims. Some results confirmed the underlying assumptions of the study, some did not. The results of the analysis, the impact on the research aims, objectives and hypotheses and the interpretation of the findings are the content of Chapter 6.

## 6.2 Hypotheses concerning the concept readiness for change

The overarching concept was readiness for change. This study was based on existing and internationally accepted models to develop a measurement tool for readiness for

change that is tailored to the particular needs of the public sector. In order to develop an instrument for this study, several research objectives and hypotheses have to be answered. The following step contains the discussion of the result hypothesis by hypothesis:

**Research objective:** To analyse and explore the relevant items of the existing concepts of readiness for change

**Hypothesis 1:** General readiness for change is lower than the specific readiness.

Due to the challenge of developing a measurement tool for the public sector, the study was conducted in an environment of civil servants and non-civil servants. Approximately 25% of the interviewees have the status of civil servants. Furthermore, the study showed a fitting cross section of the employee structure of formerly publicly-owned and now privatised company DB AG. Comparable to the situation of the employee structure of the DB AG are German companies such as Deutsche Lufthansa AG, Deutsche Post AG, Deutsche Telekom AG.

To support or reject the hypothesis, the study used two approaches to measure readiness for change: the general readiness for change and specific readiness for change. First, general readiness for change was tested through questions concerning routine seeking, emotional reaction, short term focus, cognitive rigidity and locus of control with the aim of ascertaining the general mindset of the participants concerning change. These items were taken from Oreg (2003) and slightly adopted for the study. Secondly, the specific readiness embraced the sub concepts self-efficacy, appropriateness, management support and personally beneficial. While answering the questions, the participants were requested to refer to a special change occasion that happened in the past in their business unit (Section 4.4.1). The underlying measurement model was developed by Holt *et al.* (2007a).

The readiness for change models used in the study and described in Section 4.4.5 worked from the statistical point of view very well. The general and specific readiness for change were calculated with the statistical methods: mean values, standard deviation, Cronbach's alpha, normal distribution, factor analysis, one-sample t-test for the means against three, correlations and regressions in comparison of civil servants and non-civil servant. The statistical methods led to a confirmation of the usability, reliability of the scales formed by the sub concepts. The results confirmed the expectation of the possibility to measure the individual readiness for change.

On a Likert scale from 1 (agree) to 5 (disagree), the mean value of general readiness reached 3.35. In comparison, the mean values of the sub concept scales of specific readiness were also over the average of 3. The specific readiness showed results between 3.25 for personally beneficial, 3.30 for appropriateness and 3.50 for management support. Only the scale of specific readiness: self-efficacy displayed an upward outlier with 4.14 (Section 5.1; Table 5.9). The mean values were all significant. The first hypothesis was thereby supported. Surprisingly, the respondents revealed on average a high and positive opinion towards change. Especially the mean value of general readiness and specific readiness: self-efficacy was unexpectedly high. The expectation formulated in the study was a wide range of answers with a tendency to mean values below the average of 3 due to a low readiness for change of the interviewees (Section 4.5.1).

Both ways of measuring readiness for change is supported by a selection of studies conducted by readiness for change researchers. For the general readiness, methods used by researchers such as Ng and Burke (2005) and Oreg (2003) were implemented. For the specific readiness for change, the studies from Holt *et al.* (2007a) were relied on as experts.

A comparison of the two methods to measure readiness for change in a single study has not been mentioned so far in the literature and is not recommended. Reasons are: a critical topic in feasibility of the approach of general readiness is the respondents themselves. The fact of a long-list of items on the questionnaire by testing both readiness concepts might lead to a sign of fatigue in answering the questionnaire by the respondents which influences the quality of the answers negatively. Studies of change tend to focus on changes within a single organisation. Some recent multilevel studies examined reactions to change, yet the organisations in these studies vary in type, structure, and even sectors. Furthermore, each organisation initiated a different change, and data was often collected at different stages of the change process (Fedor, Caldwell and Herold 2006). All of these factors make the changes studied less comparable. 'Double tracking' in one study could only be supported by studying the same change, initiated at the same time, and implemented in organisations of the same type.

In order to assess the feasibility of a general change occasion, further arguments speak against it. More important in the discussion is the reference by Oreg and Bearson (2011) who mention the fact that people differ in the way they use the response scale of the survey. For example, Weiner, Amick and Lee (2008) emphasise that individuals who value stability may interpret an organisational change as a threat

and therefore resist it, whereas those who value stimulation and renewal may interpret it as an opportunity and will thus be more likely to support it (Meglino and Ravlin 1998). The predisposition and emotional feeling of a change occasion is fundamentally different. It leads to a different assessment of the same situation or to a same assessment of a situation that is from an objective point of view in the effect completely different. Von Weichs (2013) confirmed this lack of assessment scale.

The experience of the pre-test in the study revealed that the respondents mentioned that they felt surprisingly overburdened with these types of questions. Before the respondents answered, they tried to establish an individual cluster of changes from a large scale to minor ones that worked as a comparative scale and was the basis to answer the questions correctly. The respondents hoped to avoid any 'wrong' answers without knowing what is right or wrong. Again, Von Weichs (2013) supported this experience and added the fact of the self-assessment: the respondents lack a neutral and objective point of reference.

Attempting to transfer the results of this study to the newly to be developed instrument, leads to the conclusion, that the measurement of change readiness should always be based on a specific change occasion.

After the discussion about the usability of both models, the hypotheses concerning the different levels have been answered.

**Hypothesis 2:** General and specific readiness for change of civil servants is significantly lower than the general and specific readiness for change of non-civil servants.

Aside from the calculation of the descriptive statistics, supplementary statistical methods were used to measure the difference of and influencing factor on the readiness for change level. The methods were one sample t-test concerning the role in the organisation, correlation of general and specific readiness for change and control variables as well as demographic variables and stepwise regression for general and specific readiness for change.

The civil servants revealed a significantly lower general readiness for change than non-civil servants. Furthermore, significant differences were seen in the concepts specific readiness for change: self-efficacy and specific readiness: appropriateness (Section 5.2.2; Table 5.10). Furthermore, the significant influence of control variables (Section 5.2.2; Table 5.11) on general and specific readiness for change is shown. The findings confirmed the assumption of a lower readiness for change and a higher resistance to

change of civil servants concerning the general and specific readiness for change and confirmed the literature review concerning civil-servants and non-civil servants presented in Section 2.4. The hypothesis is supported.

### **Broad discussion about the differences of readiness for change**

Before discussing the reasons referring to general and specific readiness for change in detail, a general discussion about readiness for change opens this chapter. A reason for the differences of the readiness for change level of civil servants and non-civil servants might result out of the response behaviour in a favorable manner of non-civil servants. Current expectations of the DB AG might force non-civil servants to display 'change affinity'. Being ready for changes and going on is part of the mission statement of the DB AG. Questions such as 'I generally consider changes to be a negative thing.', 'When I am informed of a change, I stress out a little bit.', and 'Changing plans seems like a real hassle to me.' are supposed to be answered positively. It takes courage and assurance to answer without a positive response bias. Due to the lifelong tenure of civil servants, assurance and job security is an untouchable part of their work conditions and they might therefore feel free to answer openly as they might consider their position as being largely safe from repercussions.

Another reason might be the attraction-selection-attrition (ASA) perspective. Schneider (1987) invented this term, asserting that the people make the place and that organisational culture, climate and practices are determined by the people in the organisation". People's interests yield job satisfaction and adjustment when those interests fit the environment in which the person works. Civil servants are attracted by the 'convenience' of being civil servants which also includes low risk taking. When people started as civil servants at the DB AG, they received a range of amenities and even after the privatisation of the company, they still kept them. The differences in perception of change could be due to the fact that people with a lower risk-taking propensity are more attracted by jobs in organisations that do not foster a risk-taking reward orientation. As a privatised company, the DB AG is still publicly owned. With over 300,000 employees, it exhibits all the bureaucratic characteristics of a large enterprise so there was not much pressure on civil servants to change.

Historically, the influence of the work environment was and still is a subject of interest for researchers. The German sociologist Max Weber (1864-1920) observed a connection between organisational structure and personality. In his eyes, "*the individual becomes a cog in the machinery of modern bureaucracy*" and would "*best fit*

into a bureaucratic structure” (Demmke 2005, p.45). Furthermore, Merton (1940, p.198) dealt with the topic of the influence of personality and bureaucratic structure stating that

*“the bureaucratic structure exerts a constant pressure upon the official to be methodical, prudent, disciplined”* and

*“an effective bureaucracy demands reliability of response and strict devotion to regulations (...).”*

For Merton (1940), the bureaucratic structures such as seniority, esprit de corps and the process of sanctification influence behaviour.

In this context, Thompson (2006, p.248) in the 1930s coined the term *“bureaupathic”*. Derived from the need of control felt by the organisation, behaviours such as *“supervision, failure to delegate, heavy emphasis on regulation, quantitative norms, and precedents”* come to light.

After the WW II, these theories were increasingly questioned by researchers (Demmke 2005). Allinson (1984, p.113) for example, stated that the

*“traditional image of the bureaucrat, with his dissatisfaction and insecurities reflected in pathological behaviour patterns, is not generally applicable”*.

Furthermore, Goodsell (2004, p.123) added that

*“the empirical evidence reviewed to verify the bureaucratic mentality does very little to assure us that it actually exists. Bureaucrats have not shown to be less flexible and open-minded than non-bureaucrats, and they do not appear more rule-oriented. Indeed, much evidence points to little difference between bureaucrats and ordinary people.”*

Discussion about the characteristics of civil servants and non-civil servants are going on. Fundamental evidences to support the mentality are lacking.

The influence of control and demographic variables were also tested in this study. It is important to mention that gender, role, age, tenure, and education influence the readiness for change level as is evidenced by the significant results for management support and personally beneficial. The control variables of change impact, job satisfaction, turnover intention, exploited potential and organisational commitment was also tested. Both types of variables have an impact on the readiness for change (general and specific) level (Section 5.2.2; Table 5.11). This findings support previous studies like Madsen, Miller and John (2005), and Shah and Shah (2010) who found significant relationships between these variables and readiness for change. However, Aryee and Tan (1992) and Shah (2011) did not find significant relationships.



### **Discussion about general readiness for change**

The scale of general readiness for change consisted of questions concerning emotional reactions as people dislike the difficult adjustments required at the beginning of the change regardless of the long-term benefits. Furthermore, 'cognitive rigidity' stood for the ease of which the participant was willing to adapt the changes. 'Locus of control' reflected the source of control over changes affecting the participants. These questions taken together helped assess the emotional reaction of the participants towards change (Foster 2010). 'Routine seeking' and 'short term focus' thinking were both connected with sticking to a chosen way of action *"because the alternatives are less appealing"* (Foster 2010).

The public perception of civil servants as

*"having different personalities, being motivated by different incentives, working less hard than employees (non-civil servants) in the private sector, being more security-minded, more rule-oriented and not innovative"* (Demmke 2005, p.43)

is still prevalent.

In Section 2.3.4, the different status levels of civil servants were introduced and described: 'assigned' civil servants are civil servants who are employed by the Federal Rail Property owned by the Federal Government but assigned to the DB AG; the civil servants on leave are treated as non-civil servants by the DB AG which leads to the fact that the civil servant has no service obligation resulting from the civil-servant status and finally, the civil servant in a managing position. The circumstances of the work conditions e.g. lifelong contracts, etc. are the same for all three types of the civil servants. The list of the civil servants type is used at this point because it supports and emphasises the discussion and interpretation of the findings concerning civil servants. Later on, the types will be again summarised under the term civil servants.

A look at the role differences in the readiness measurement showed (Table 6.2) that the 'assigned' civil servants displayed the lowest readiness for change level, as well as in the topic general and specific readiness for change. Greater variances are visible at the general readiness for change. It should be noted that the variances are not huge, but significant and the results contrast those civil servants with managerial roles who always displayed the highest mean value.

**Table 6.2 General readiness for change: Role in organisation**

Role in organisation	Mean	Std. Deviation	N
<b>'Assigned' civil servant</b>	<b>3.05</b>	0.613	42
'Leave of absence' civil servant	3.34	0.615	82
Civil servant in a managing position	3.32	0.735	14
Non-civil servant	3.34	0.585	290
<b>Manager (non-civil servant)</b>	<b>3.50</b>	0.465	96

The results of the non-assigned civil servants might result out of this status change and influences the personal view of things, setting and mindset. It seems that 'assigned' civil servants might stick more to the traditional values such as being expected to prepare, implement and execute government policies than others. The environment and work contract did not change much for the 'assigned' civil servants as there was no change in their employment contract.

A closer look at the control and demographic variables showed that age did not correlate significantly, but correlated negatively to the general readiness for change. This can be linked to the negative correlation of tenure to the organisation. The longer people work for the organisation and the older they get; the more the level of general readiness for change decreases. The mindset about general change also transforms during the years of working. This finding is also in line with the strong significant impact of positive and negative change impact on the civil servants and non-civil servants (Section 5.2.2; Table 5.11).

The stepwise regression confirmed the significant impact of these control variables. It could be said that the experience of life and work influences the general readiness for change.

### **Discussion about specific readiness for change**

The specific readiness for change was significantly supported for the sub concepts appropriateness and self-efficacy. Appropriateness generated a mean value of 3.12 for civil servants and 3.36 for non-civil servants (Section 5.2.2; Table 5.10). Self-efficacy showed the highest mean with 4.00 for civil servants and 4.19 for non-civil servants (Section 5.2.2; Table 5.10). Interestingly, not all sub concepts such as management support (feeling how committed the management is concerning the prospective of change) and personally beneficial (feeling that someone will personally benefit from the implementation) were confirmed due to the non-significant results.

The results for the specific readiness for change appropriateness per role are given below (Table 6.3).

**Table 6.3 Specific readiness for change appropriateness: Role in organisation**

Role in organisation	Mean	Std. Deviation	N
<b>'Assigned' civil servant</b>	<b>3.02</b>	0.913	42
'Leave of absence' civil servant	3.18	0.909	82
Civil servant in a managing position	3.11	1.113	14
Non-civil servant	3.29	0.862	290
<b>Manager (non-civil servant)</b>	<b>3.59</b>	0.872	96

Appropriateness refers to the extent to which organisational members feel how advantageous it will be for the organisation if the change is implemented. Civil servants, especially 'assigned' civil servants felt less confident about the change (the change addressed the issue it was purported). In this case, it seems that the civil servants were concerned that the changes did not match the needs of their work section (Table 6.3). Holt *et al.* (2007a) interpreted similar results in their study that the civil servants seem to dislike changes that rejected the existing organisational culture.

Self-efficacy stands for the feeling that the change is needed and the individual's belief in one's capacity to muster the cognitive, motivational, and behavioural resources to perform in the change process. Self-efficacy addresses the question 'Can I/we successfully make this change?' and is represented by individual attributes. In the last two decades, self-efficacy is one of the most studied variables in the psychological and organisational sciences (Scherbaum, Cohen-Charash and Kern 2006). The findings indicate that civil servants are less motivated to engage in change activities. Reasons might be that they did not feel there is a high probability to attain certain rewards that they value. The civil servants might be afraid of not possessing the skills and abilities to execute the change in the required way and outcome. Self-efficacy is influenced by the individual's perception about how past situations were dealt with, and the individual transfers these concepts onto future events. A lack of self-confidence could be the reason why the civil servants, in this case especially the civil servants in a managing position, display a lower level of self-efficacy than non-civil servants (Table 6.4).

**Table 6.4 Specific readiness for change self-efficacy: Role in organisation**

Role in organisation	Mean	Std. Deviation	N
'Assigned' civil servant	3.93	0.650	42
'Leave of absence' civil servant	4.06	0.644	82
<b>Civil servant in a managing position</b>	<b>3.87</b>	0.869	14
Non-civil servant	4.19	0.559	290
<b>Manager (non-civil servant)</b>	<b>4.28</b>	0.551	96

A glance at the demographic and control variables for specific readiness for change showed that age has a significantly negative influence on the specific readiness concepts: appropriateness, management support, personally beneficial. Again tenure correlated significantly negative on all concepts of specific readiness. Educational level seemed to be of minor importance.

Appropriateness and personally beneficial are positively and significantly strongly correlated with the control variables change impact, job satisfaction, exploited potential and organisation commitment (Section 5.2.2; Table 5.11). The strong correlations, especially with the item change impact is surprising and underlines the statement that it makes sense to concentrate on the measurement of specific readiness for change due to the possibility of influencing these concepts by demographic and control variables.

**Summary of the research objective:** To analyse and explore the relevant items of the existing concepts of readiness for change

Summing up the results on the one hand the statistical measurability and on the other the content aspects, the author came to the conclusion that readiness for change as a measurement tool can be determined. At the end of this chapter, the final instrument will be presented which includes the readiness for change items, the control and demographic variables and further influencing concepts on readiness for change. A specific change occasion as a reference is necessary to create a uniform platform as a springboard for further analysis and derived actions. The measurement of the general readiness for change is not sufficient and recommended because it only scratches at the surface and it neglects for instance, cognitive bias and response bias. The diversity of characters supports this line of thinking. For example, one characteristic of the study was the differences between civil servants and non-civil servants. Motivational drivers behind the responses have to be eliminated or revealed. The study does not give any answers to the questions why civil servants and non-civil servants show a different

level of readiness for change, but it did show that there are differences. However, it can be said that several items (such as age, tenure, education and change impact, job satisfaction, turnover intention and organisational commitment) were detected that correlated more strongly with the concept of specific readiness than general readiness for change.

Further studies could build upon this fact and conduct a study to analyse the reasons for it. Do civil servants have a predisposition towards change or is their attitudes a result of the daily routine and the working environment? This question remains open.

### **6.3 Hypotheses concerning the concepts Person-Organisation fit and Person-Job fit**

The P-O fit and P-J fit play a major role in the public service motivation studies (Stazyk 2010).

The P-O fit describes the relationship of the employee's values and the organisational-level values. The congruence of the employee's characteristics and the job performed for the organisation is the P-J fit (Stazyk 2010).

**Research objective:** To analyse the concept of Person-Environment fit and the sub concepts

**Hypothesis 3:** Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on specific readiness for change than on general readiness for change.

Under the umbrella of P-E fit, several concepts of personal-fit are aggregated at the moment. As described in the literature review in Section 2.2, the relevant and important concepts of P-O and P-J fit were deduced from the P-E fit concept. Reasons for this choice are the importance of the impact of culture, atmosphere and performance of the organisation on readiness for change and the influence of the demands and needs of the job on the readiness for change level. The study of Von Weichs (2013) and Pimental (2008) supported this decision.

Statistical methods such as Cronbach's alpha, the mean value, the standard deviation and correlations to form the scale of P-O fit and P-J fit were used. The scales were confirmed.

While some authors contend that affect toward peers, job, and organisation is a precursor to readiness for change (Rafferty and Simons 2006), others argue that change initiatives are perceived as threatening and disruptive of the individual sense of

identification with the organisation, primary workgroup, and job characteristics (Jones, Jimmieson and Griffiths 2005).

Concentrating on P-O and P-J fit, the stepwise regressions presented in Section 5.2.3 in the Table 5.34 to Table 5.37 revealed the existing and significant influence of P-O on specific readiness: self-efficacy (Pearson's  $r=0.084$ ,  $p=0.014$ ), appropriateness (Pearson's  $r=0.169$ ,  $p<0.0005$ ), management support (Pearson's  $r=0.229$ ,  $p<0.0005$ ) and personally beneficial (Pearson's  $r=0.153$ ,  $p<0.0005$ ). The significant influence on all concepts was surprising and underlines the importance of the P-O fit concept in this environment. Increasing fit with the organisation was positive associated with the increasingly positive perception with specific readiness for change. It also uncovers the chance of increasing the P-O fit through the implementation of a successful change process. While change was perceived as positive and necessary to the organisation, it was also fostered by senior level managers, the individuals' sense of ability to functionally cope with upcoming changes and they reflect positive individual-level valence toward change at the DB AG.

Research studies, such as the one made by Pimental (2008), confirmed the significance only for specific readiness: appropriateness and management support. Gilbert (2006, p.156) argued that the mindset of the individuals towards coping change and individual perception towards change was negative due to the

*“interplay of cognitive representations of change and change implementation strategies, wherein cognitive mechanisms of response to organisational change operate in association with the overall change management strategy to result on attitude toward organisational transformations”.*

Nevertheless, the influence of P-O fit on specific readiness for change in this study is not very high in comparison to other independent variables, but nonetheless, significant and positive.

No significant correlation was displayed on general readiness for change which was noteworthy and in line with the thesis of a need for specific change as a precise indicator for change readiness.

The P-J fit as the independent variable influences only the specific readiness for change in the areas of self-efficacy (Pearson's  $r=0.100$ ,  $p=0.005$ ) and personally beneficial (Pearson's  $r=0.076$ ,  $p=0.049$ ) (Section 5.2.3; Table 5.13, Table 5.14). Increasing fit with the job was associated with increasingly positive perceptions regarding the personal benefit of the upcoming changes to the job and with perceptions of self-efficacy of the change. Specific readiness: personally beneficial and self-efficacy

lay in the respondent's ability, rationale, and motivation to engage in the functional change. Interesting to mention is that both specific readiness concepts are subject to volitional control. The result is in line with the findings in the literature: P-J fit is assessed as the match between what an employee wants and receives from performing job, it is correlated with improved job satisfaction, and organisational commitment (Sekiguchi 2004). The literature does not report any influences of the P-J fit on readiness for change. Again, the influence is not high according to the regression, but significant and positive. And the results are in line with findings, e.g. Pimental (2008).

No significant influence was displayed for the general readiness for change.

The hypothesis was confirmed.

**Hypothesis 4:** Person-Environment fit, especially Person-Organisation fit and Person-Job fit has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.

The questions were tested with the help of correlations and regressions.

The hypothesis was partially confirmed (Section 5.2.3; Table 5.13). The P-O fit was not correlated to the general readiness for change among non-civil servants (Pearson's  $r=0.038$ ,  $p=0.453$ ) as opposed to civil servants (Pearson's  $r=0.201$ ,  $p=0.018$ ). Surprisingly, all concepts of specific readiness for change were significantly and positively associated with P-O fit in both target groups civil servants and non-civil servants (Section 5.2.3; Table 5.13).

An additional unexpected result that the study uncovered is the strongest correlation of civil servants for all readiness concepts with a focus on specific readiness: personally beneficial (Pearson's  $r=0.518$ ,  $p<0.001$ ). The non-civil servants display in total, the weakest correlation between P-O fit and readiness for change. Again, the strongest result was in the category personally beneficial (Pearson's  $r=0.392$ ,  $p<0.001$ ). The regression results confirmed the correlations of both. Especially, the result of specific readiness: personally beneficial supports the findings of the previous hypotheses because it seems that the sub concepts of personally beneficial and the identification with the organisation are very important for civil servants and non-civil servants alike. The results show that the organisation in general has a high impact on the readiness for change.

An increase in the P-O fit would positively influence the general and specific readiness for change level. A strong fit

*“reflects common views as to the organisation’s goals, strategies, values and adoption of new ideas, as well as a stronger identification with the tasks, principles and standards of work in the organisational environment”* (Vigoda-Gadot and Meiri 2008, p.184).

People who have a high person-fit with their organisation become globally committed to the organisation and wished to remain in the organisation (Lauver and Kristof-Brown 2001). In accordance with researchers, this has a positive impact on contextual, but not task performance (which will become increasingly important in the future for organisational success). Vice versa, a high general and/or specific readiness for change supports the organisation efforts to implement changes and to reduce resistance to change.

The strong results of civil servants concerning the P-O fit were not expected. Nevertheless, the findings support the existing public management research results for civil servants focusing on P-O fit. The P-O fit, also called the identification with the values of the organisation of civil servants is higher than that of non-civil servants. As mentioned in Section 2.4.1.2, civil servants are said to have a ‘willingness to serve in the public sector’. It has been noted that civil and public servants attach a higher importance on intrinsic incentives like *“being useful, helping others and achieving accomplishments in work”* than private sector employees (Rainey 2009, p.263). The identification with the organisation and the goods the organisation in the public sector produces is more important than the job content. The findings of this study support the results of the researchers Bright (2008) and Steijn (2008) who have consistently found positive relationships between P-O fit and PSM. Civil servants at the DB AG display a PSM level and the PSM is significantly correlated to P-O fit and readiness for change which will be discussed in the next chapter.

The P-J fit is defined as the match between the abilities of a person and the demands of a job (Lauver and Kristof-Brown 2001). P-J fit is established in order to find the suitable persons for the job. It led to a more structured recruitment approach and gives the organisations a selection measure that was widely accepted (Werbel and Gilliland 1999).

The findings in detail are that the P-J fit was not correlated to the general readiness for change among civil servants and non-civil servants. Rather, all aspects of specific readiness for change were significantly and positively associated with P-J fit in both target groups civil servants and non-civil servants (Section 5.2.3, Table 5.14). A high identification with the job leads to a high specific readiness for change. However, this statement applies to both civil servants and non-civil servants. In accordance with the



P-O fit, a high P-J fit is related to several variables such as job tenure, job satisfaction and career success (Bretz and Judge 1994). The results lead to the conclusion that the impact of a high readiness for change level reveals the same positive effects as the P-O fit.

The correlation between P-J fit and specific readiness for change is significant, especially for civil servants. The results do not meet the expectations that were held at the onset of this study. Out of the literature review, it was assumed that the P-J fit for non-civil servant is an important factor and therefore, of high influence on the readiness for change. It was assumed that civil servants are more focused on the organisation due to their PSM orientation while the non-civil servants choose their job in relation to the content. The non-civil servants focus on the job content and they are willing to change the job in the event of a better offer. Maximising personal gain was expected to be an important driver for the non-civil servants. However as mentioned, the results speak against it.

Finally, the level of readiness for change can be for both civil servants and non-civil servants positively and negatively influenced by the P-O fit and P-J fit. An increase of both delivers many beneficial effects. The hypothesis was partly confirmed.

**Summary of the research objective:** To analyse and explore the concept of Person-Environment fit and its sub concepts

Out of the umbrella concepts P-E fit, the P-O and P-J fit were identified as the relevant concepts in relation to readiness for change. Both concepts revealed an impact on the specific readiness, but not on the general readiness for change. This leads to the conclusion that P-O fit and P-J fit should be part of the measurement tool.

Focusing on civil servants and non-civil servants, it is clear that differences exist. The impact of P-O fit on specific readiness for change (appropriateness, management support and personally beneficial) is significant for civil servants, but not for non-civil servants. Similar results revealed the P-J fit. The core of the analysis is as follows: P-O and P-fit are relevant for the readiness for change and differ according to the role in the organisation.

### **6.4 Hypotheses concerning the concept Public Service Motivation**

The PSM is about a special form of intrinsic motivation people display in their behaviour and is thought of as *“an individual’s orientation to delivering services to*

*people with a purpose to do good for others and society”* (Perry and Hondgehem 2009, p.3). The measurement scale followed the development of Perry (1996). He identified four components that form the PSM: policy-making, public interest, self-sacrifice and compassion.

**Research objective:** To analyse the concept of Public Service Motivation

**Hypothesis 5:** Public Service Motivation of civil servants is significantly higher than the Public Service Motivation of non-civil servants.

Several data analysis techniques were used to address the hypothesis such as mean values, Cronbach's alpha, standard deviation, one-sample t-test, factor analysis, correlation and regression. The results of the statistical methods are usable, but the data is not always robust or conclusive. An example is the 'poor' Cronbach's alpha 0.58 for the concept PSM: public interest.

### **Aggregation of the PSM sub concepts**

The author was careful concerning an aggregation of all four PSM factors. The results of the correlations of all four sub concepts point in the same direction, but an aggregation is in the eyes of the author not useful. The founder of the original PSM scale and one of the most important researchers in this field, Perry (1996) keeps the sub concepts independently. Perry (1997) supported the distinctiveness of the different dimensions, finding that they often had different antecedents and if they had the same antecedents, he found that they had different relationship directions. His example was followed by leading PSM researchers such as Kim (2010), Bright (2007) and Camilleri (2007). They all focused on each sub concept separately and analysed the differences individually. An aggregation of all PSM items would help to compare the results. But in fact, the researchers have still not agreed on a systematic method of measuring PSM and this has led to the use of different sub concepts, particularly discussed is self-sacrifice, and the items to form the scales. Furthermore, two of the four sub concepts in this study are not significant which does not support the idea of an aggregation.

### **Differences of the PSM level of civil servants and non-civil servants**

Concerning the mean values over all roles in the organisation of the DB AG, the PSM: public interest scored the highest, followed by PSM: compassion, PSM: self-sacrifice

and PSM: policy-making (Section 5.2.5; Table 5.17). The means are slightly higher in comparison to other studies, e.g. Camilleri (2007), Hammerschmid, Meyer and Egger-Peitler (2009). This might however, be the result of methodological inconsistencies because of a different use of the measurement scale and PSM model. This result confirmed for the first time the expectations of the existence of PSM in Germany. Important to mention is that differences were reached in all categories such as policy-making, public interest, compassion and self-sacrifice.

A more detailed analysis presented in Table 6.5 showed that civil servants and non-civil servants at the DB AG were all found to have a PSM level. The PSM level of civil servants is higher than the level of non-civil servants.

**Table 6.5 Public Service Motivation: Role in organisation**

Role in Organisation		PSM: policy-making	PSM: public interest	PSM: compassion	PSM: self-sacrifice
'Assigned' civil servant	Mean	3.11	<b>3.92</b>	3.35	3.28
	Std. Deviation	0.732	0.621	0.671	0.726
	N	42	42	42	42
'Leave of absence' civil servant	Mean	3.21	<b>3.76</b>	3.45	3.13
	Std. Deviation	0.739	0.539	0.663	0.578
	N	82	82	82	82
<b>Civil servant in a managing position</b>	Mean	3.23	<b>3.97</b>	3.17	3.34
	Std. Deviation	0.625	0.520	0.429	0.460
	N	13	14	14	14
<b>Non-civil servants</b>	Mean	3.04	<b>3.73</b>	3.34	3.14
	Std. Deviation	0.780	0.565	0.706	0.647
	N	287	287	288	288
Manager (non-civil servants)	Mean	3.10	<b>3.64</b>	3.34	3.16
	Std. Deviation	0.772	0.587	0.603	0.577
	N	96	96	96	96

The “*individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions and organisations*” (Perry and Wise 1990, p.368) was revealed for the civil servants and non-civil servants in this study. Studies made by Steijn (2008) confirmed the findings. However, the independent t-test of the mean values showed that the significant result was only confirmed for the public interest ( $p=0.039$ ; Section 5.2.6; Table 5.18). Nonetheless, due to the results of international studies and the importance of the concept in the internationally public sector context, more robust and conclusive results for the German public sector were expected. These results place doubts on the concept and relevance of the PSM in Germany.

### **Influencing variables on PSM sub concepts**

The regression results of Section 5.2.6 (Table 5.20 to Table 5.22) analysed the influencing factors on PSM. Significant influencing results were displayed for the concept PSM: public interest role as a civil servant and age and PSM: compassion age for civil servants and non-civil servants.

### **Classification of the study results in the current research context**

This study is the first quantitative study concerning PSM in Germany. Hammerschmid, Meyer and Egger-Peitler (2009) conducted a similar study in Vienna, Austria, which was the first one in a German-speaking area.

The results were similar and only the sub concept public interest correlated significantly and positively. Public interest seems to be of high importance for the civil servants and non-civil servants. The norm-based motive public interest is grounded in a desire to pursue the common good. It might refer to the government interest or additionally to a collective interest. An important part of this collective interest is the creation of public welfare (Vandenabeele, Scheepers and Hondeghem 2006). As an aside, it was found in the pre-test in preparation for this survey that all of the civil servants interviewed for the pre-test worked on a voluntary basis for example, in a sports club or hospice, and none of the non-civil servants did. It seems that some individuals are inclined to become civil servants in order to serve the public and enhance the public interest in general, and do not only follow a specific interest (Kim 2006). Public interest, as a norm-based motive, results from an attempt to provide public services for all people at the same standard and leads to a major motive, which is loyalty to duty. Because of the high commitment towards public interest, it can be assumed that the public service ethos is pronounced in Germany.

It seems that the 'German-cultured' individuals tend to have a low policy-making level as the study of Hammerschmid, Meyer and Egger-Peitler (2009) reported. Also, the results display that the civil servants and non-civil servants at the DB AG are not highly interested in PSM: policy-making. PSM: policy-making is, according to Perry (1996), a rational motive that is grounded in the maximisation of individual utility. Vandenabeele, Scheepers and Hondeghem (2006) figured out that civil servants in Germany are less occupied with policy-making than with defending the policies of their ministers to the people. This might be transferred to the civil servants at the DB AG even if they are not directly working for a minister. Additionally, since the privatisation took place in 1994,

the civil servants and non-civil servants are asked even less frequently to perform in the direction of politics. In the international discussion, researchers such as Kim (2005) critically questioned the appropriateness of the PSM: policy-making to represent a rational base. The items of the scale ask whether the respondents like politics, politicians, and political phenomena and not whether the respondents are attracted to policy-making. Grisch von Ah (2009) stated that there are fundamental differences in the use of the term policy-making. In the Swiss environment (which could also apply to Germany), the term politics and policy is interchangeable. While policy stands for the political content, politics is understood as the processes and persons who practice politics (Grisch von Ah 2009). Policy and politics are negatively loaded and embody a negative image. Also in the international context, the concept PSM: policy-making is doubted as being a viable factor for assessment.

The mean value of the PSM: self-sacrifice was higher than the one of PSM: policy-making. It stands for sacrificing personal interest for a greater good (Vandenabeele, Scheepers and Hondeghem 2006). Perry (1996, p.7) cited John F. Kennedy famous quote: *“Ask not what your country can do for you, but ask what you can do for your country.”* This level of benevolent patriotism is not common in Germany. For German civil servants, it means *“to protect the democratic values of the state even when it does not coincide with the personal value”* (Vandenabeele, Scheepers and Hondeghem 2006, p.22). The low commitment might be a result of the privatisation, too. Furthermore, it indicates that this sub concept does not fit to the German society.

Compassion is also not very pronounced for the civil servants and non-civil servants at the DB AG. As a norm-based motive, compassion is grounded in human emotions and is a commitment to a program from a genuine conviction about its social importance. It might overlap with the dimension of public interest as well. Another reason for the low commitment towards PSM: self-sacrifice and PSM: compassion mentioned by Von Weichs (2013) and Hammerschmid, Meyer and Egger-Peitler (2009) could be the culture of the countries where the studies took place. Germany is characterised by a masculine culture. Indeed, it has been ranked as the third highest masculine-oriented culture in Europe (Hofstede 2001). Masculine behaviour tends to stand in opposition to the sub concepts self-sacrifice and compassion.

Nevertheless, the hypothesis is supported by the results.

**Hypothesis 6:** Public Service Motivation has a significantly higher impact on the readiness for change of civil servants than on the readiness for change of non-civil servants.

The idea of this hypothesis is to examine the relationship between PSM and readiness for change, especially for civil servants. A correlation and regression were calculated to answer and ultimately, reject the hypothesis. Important to mention is that civil servants showed partly a significant higher PSM level than non-civil servants (Section 5.2.6, Table 5.18).

The results of the regression supported the influence of PSM on readiness for change:

- For civil servants: between self-sacrifice (PSM) and the personally beneficial (specific readiness)
- For non-civil servants: between policy-making (PSM) and general readiness for change, self-sacrifice (PSM) and personally beneficial (specific readiness) and self-sacrifice (PSM) and self-efficacy (specific readiness)

A surprising finding is the high number of regression coefficients for non-civil servants and a low number for civil servants. In total, not many significant combinations of PSM factors influencing readiness for change could be uncovered. These findings will now be discussed from two perspectives: a narrow and broader point of view.

### **Discussion of the findings from a narrow point of view**

For the interpretation of the findings, it is important to keep in mind that the readiness for change is higher and the PSM of non-civil servants is lower as opposed to civil servants.

The combining element of the findings is the self-sacrifice as a sub concept of the PSM. The PSM motives are founded on an ethic of serving the public. Public service requires an individual's self-sacrifice that is the willingness to substitute service to others for tangible personal rewards (Perry 1997). For Kim and Vandenabeele (2010), the PSM is mainly based on self-sacrifice. Self-sacrifice, again, is based on affective motives and describes a characteristic of individuals who are likely to perform acts that are intended to do good for others and shape the well-being of society as a way of satisfying their personal needs (Kim and Vandenabeele 2010). The result of the regression displayed that an increase in self-sacrifice of civil servants and non-civil servants at the DB AG has a positive impact on the personally beneficial (specific readiness). Personally beneficial (specific readiness) represents the extent to which a

person feels that he or she benefits from the prospective change (Section 5.2.6; Table 5.23).

For non-civil servants, a rising self-sacrifice (PSM) has impact on self-efficacy (specific readiness). It refers to the perceived capability of implementing change. Self-efficacy (specific readiness) is the feeling of being capable of the change. An increase in the necessity and belief in success of the change improves the chance to implement a positive change process (Section 5.2.6; Table 5.24).

Finally, the non-civil servants revealed a correlation between attractions to policy-making (PSM), which is the interest in policy and the desire to satisfy personal needs while serving the public interest, and the general readiness for change. A higher level of policy-making decreases the resistance to change for the non-civil servants and improves the success of the change efforts (Section 5.2.6; Table 5.24).

The findings did not supply any results for the PSM concepts - public interest and compassion. The results show that efforts to increase both public interest and compassion have no impact on the general or specific readiness for change level of civil servants or non-civil servants. Translated into action, this means that an increase of the sub concept compassion (the wish to do something good for others) and public interest (the wish to serve public interest) has no effect on the mindset towards change readiness. Public interest is a norm-based motif and this group of motives such as desire to serve the public, loyalty to the government and patriotism (Brewer 2003) is important for civil servants and non-civil servants as has been explained in Section 6.4, but not in the context of readiness for change as the results show.

Looking at the readiness for change scale, the sub concepts appropriateness and management support of specific readiness for change and the general readiness for change are not significantly influenced by the PSM. Management support measures the extent to which one feels that the organisation's leadership and management are committed; appropriateness measures the extent to which one feels that the change effort was legitimates and appropriate for the organisation. Both topics management support and appropriateness are not linked to the emotional, intrinsic orientated PSM.

### **Discussion of the findings from a broader point of view**

Public management literature is still struggling with the question of whether civil servants and non-civil servants in the public sector are a unique workforce in terms of their expectations, values (Willem, Vos and Buelens 2010), practices, ethics and

motivation (Rondeaux 2006). Especially the motivation of working in the public sector plays a major role in public sector research.

The importance of motivation in general and in the public sector is undoubted. Motivation stimulates civil servants and non-civil servants in the public sector and helps to satisfy their needs and expectations. An extensive variety of studies indicate the positive impact of PSM on several behavioural characteristics: job satisfaction (Steijn and Leisink 2006; Kim 2005; Norris 2004), organisational commitment (Taylor 2007; Cerase and Farinella 2006; Camilleri 2006), reward preferences (Norris 2004; Houston 2000; Alonso and Lewis 2001), individual performance (Grant 2008; Alonso and Lewis 2001; Naff and Crum 1999) and organisational performance (Kim 2005; Brewer and Selden 2000).

This study found that there was a positive correlation of PSM and readiness for change for both civil servants and non-civil servants. An increase of PSM influences the positive outcome of change efforts. Readiness for change plays a major role in the current situation in the public sector. Basic changes such as privatisation efforts as a part of the NPM reform are still going on in the public sector. Public services in Germany have been adopting private sector management techniques for over a decade now. This has been forced by the NPM, which supports a

*“contractual approach to public services delivery where government hires managers who contract with public and private sector organisations in a deregulated market,”* (Hebson, Grimshaw and Marchington 2003, p.482)

instead of relying on a rules-based administrative approach.

The change impact for former publicly-owned companies such as Deutsche Post AG, Deutsche Lufthansa AG, Deutsche Telekom AG or DB AG was and is tremendous.

Fundamental to the restructuring of the public services has been the process of redefining the workforce. This is particularly relevant for civil servants where the orientation of the public service and the public service ethos provides a significant source of identification (Flynn 2007). Several studies have suggested that privatisation has had a negative effect on the public values of the civil servants (Steijn 2008).

This study revealed that both civil servants and non-civil servants display a PSM level. However, these PSM levels differ as non-civil servants indicated a lower PSM level than the civil servants. The results of the correlation and regression lead to the conclusion that two different mindsets or cultures exist within the DB AG: the PSM-oriented civil servants and non-civil servants standing for the public service ethos.



PSM is also a phenomenon which has appeared in connection with non-civil servants. Perry (1997) found identification to be positively associated with civic duty and self-sacrifice confirmed in his study. The conclusion is possible that non-civil servants in general, display a PSM level. However, the PSM level might be higher for non-civil servants working in the public sector. This can be the reason why non-civil servants decide to work in the public sector. Due to appearance of PSM for civil servants and non-civil servants at the DB AG might lead to the conclusion that PSM depends more on the organisation, than on the job status. Individuals select companies according to their own PSM preference.

The professional civil service in Germany still appears to be one of the strongholds in traditional public sector management. As mentioned in Section 2.4, the public service ethos embraces core elements of the civil servants' identity such as

*“objectivity, neutrality, impartiality towards sovereign and citizen, legality of action, stability against political changes, equity and secrecy”* (Meyer and Hammerschmid 2006, p.9).

Furthermore, in accordance with Rayner, Williams, Lawton and Allinson (2010), the public service ethos based on public interest, the balance of divergent societal interests and stakeholders, honesty, integrity and accountability. Lawton (1998, p.64) defines the public service ethos as a *“way of life”* which is a currently subject to change. Opposed to the public sector with its strong manifestation of duty, procedure and obligation, stands the managerial approach of the NPM with emphasis on results, efficiency and managerial competency. Public organisations as providers of public goods and services to customers remove the concept of a sovereign state (Brunsson and Sahlin-Andersson 2000). A new social identity for public sector civil servants and non-civil servants is being promoted, making new public management an *“identity project”* and containing the development from a servant for the whole state, its interest and its people to a *“manager of organisations and rare resources”* (Thomas and Davies 2005, p.684).

Although the described differences between civil servants and non-civil servants are significant, they are minor. Three scenarios as an explanation for the minor results are possible: the non-civil servants working at the DB AG have a predisposition to serve the public, the PSM level of civil servants in Germany is not high in comparison to other cultures or the civil servants (and non-civil servants) have changed their mindset and values over the years.

In the first scenario, the non-civil servants at the DB AG have a higher than average level of PSM and this can be traced back to the intrinsic values of the non-civil servants. As seen in Section 5.2.6 (Table 5.18), the non-civil servants hold altruistic motives such as the desire to serve the public interests and feel compassion. These non-civil servants look for jobs in organisations that better fit their altruistic predispositions. Highly public service motivated individuals

*“will perceive the fairness of their workplace less in terms of how they themselves feel treated but more in line with their concern for others and for the society at large”* (Steen 2008, p.214).

The author herself as a full-time employee at the DB AG supports this explanation from her own experience. She values the culture in the organisation, the public service idea and the wish to serve the public with public goods and services. Why these non-civil servants do not become a civil servant could be a subject for further research. In accordance with Steen (2008), little is known about the PSM level of non-civil servants, especially in the private sector and in combination with civil servants in the public sector.

The PSM orientation of civil servants at the DB AG is confirmed by this study. The second scenario describes the assumption of a general lower PSM orientation of civil servants in Germany altogether. This is quite difficult to assess. Until today, the author has not found any quantitative or qualitative study concerning PSM in Germany to compare the findings of the study. Looking at Austria and Switzerland, one finds two studies in this field of research. The study in Switzerland by Grisch von Ah (2009) was conducted as a qualitative study and confirmed in general, the existence of PSM in the public sector in Switzerland. The Austrian quantitative study by Hammerschmid, Meyer and Egger-Peitler (2009) supported the results of the civil servants concerning the higher PSM level. Still, a comparison between these studies and this one is difficult due to the use of different scales and items.

The last scenario, a change of values over the last two decades can be considered even if the lower readiness for change level discussed in Section 5.2 speaks against it. The privatisation took place in the year 1994. Since then, newly-hired persons have not received the status of a civil servant. Individuals who decided to work for the DB AG are employed as private workers, while the remaining civil servants kept their status. The DB AG underwent tremendous changes and moved towards the values of a private sector company that might have led to a transformation of the public sector ethos. The ethos shifted from providing services to an optimum outcome for the customer. This shift has created the need for new values. Referencing the discussion

in Section 5.2, the organisation also forms the individuals and this might have happened at the DB AG, too.

Finally, the hypothesis is neglected.

**Summary of the research objective:** to analyse the concept of Public Service Motivation

PSM exists in Germany, too. Furthermore, civil servants display a higher PSM level than non-civil servants and PSM influences the readiness for change level. The relevance of PSM for the new instrument is low.

### **6.5 Hypotheses concerning the concept need for security**

The concept need for security is an essential pillar in the discussion about civil service in Germany. This fact and the dualism of employment of civil-servants and non-civil servants at the DB AG was the driver to include the concept in the study as a separate research field.

**Research objective:** To prove the concept of need for security

**Hypothesis 7:** Need for security is significantly higher of civil servants than of non-civil servants.

With the help of the descriptive statistics, the reliability of the need for security scale was proven and the hypothesis confirmed.

As expected, the civil servants at the DB AG displayed a higher need for security level than the non-civil servants. This applies especially for the 'assigned' civil servants and the civil servants in a managing position. A further detailed analysis supported the results as shown in Table 6.6.

**Table 6.6 Need for security: Mean values per role in organisation**

Role in Organisation		Need for security
'Assigned' civil servant	Mean	3.69
	Std. Deviation	0.552
	N	42
'Leave of absence' civil servant	Mean	3.44
	Std. Deviation	0.670
	N	82
Civil servant in a managing position	Mean	3.89
	Std. Deviation	0.783
	N	14
Non-civil servant	Mean	3.51
	Std. Deviation	0.746
	N	290
Manager (non-civil servant)	Mean	3.09
	Std. Deviation	0.679
	N	96

As described in Section 2.4.2, the concept of civil service is based on proper payment and job security in return for loyalty to the state. The results of the study confirm the expectation that the need for security is a motivational driver for civil servants to become a civil servant and it explains the findings for the concept of need for security. Again, the question arises as to whether this need is part of the intrinsic motivation of persons who choose to become a civil servant or is it a side-effect of the work conditions of a civil servant which might be a topic for further research.

The influence of gender and age was also tested (Section 5.2.8; Table 5.32). It was shown that women have a greater need for a secure work environment than men. One reason might be the high number of men who responded to the questionnaire and delivered an uneven distribution of the hierarchy level due to a lower number of women in managing positions. Another reason might be a gender discussion due to the former demand for a 'secure' breadwinner in Germany which is in this case, the men. Women might be driven by the search for a stable and 'secure' living condition for their family.

Additionally, age played an important role as the older people are, the higher the need for security is. Other researchers has discovered that age has been found to be inversely related to perceived job security (Postel-Vinay and Saint Martin 2005), probably because unemployment costs increase with age given the decrease in the re-employment rate. A reason could be justified by the normal life cycle of human beings or by a cohort effect. The author tends to explain the fact by the normal life cycle of

human beings and the demand for security in old age. The cohort effect could not be proven because the study is not a longitudinal analysis and comparisons are not possible.

Opposed to Erlinghagen (2008) who did not find any effects of gender, Salladarre, Hlaimi and Wollf (2001) as well as this study uncovered a higher need for security for women. Maybe men are more career-oriented, interested in promotion and higher wages than having a secure job. Women might have other values such as family and having a secure job (Salladarre, Hlaimi and Wollf 2001). Of course, also in the society changes are going on and the same study conducted in 10 years might display equal results for men and women.

**Hypothesis 8:** Need for security has a significantly higher impact on specific readiness for change than on general readiness for change.

The statistical methods, like the calculation of the correlations and regressions delivered the answer and supported the hypothesis. Both calculation methods revealed medium significant influences in a negative way on general and specific readiness: self-efficacy and personally beneficial (Section 5.2.9; Table 5.33 to Table 5.37). As expected, a high need for security level lowered the general and specific readiness for change: self-efficacy and can be seen as an important predictor for readiness for change.

The impact of need for security on readiness for change was underlined by Goksoy (2012) and is supported by this study. Reasons can lay in the change itself. Often change represents something new, moving from a status quo to a new direction. This movement can cause fear in general, fear of the unknown and loss of clarity, and also sometimes danger. When change is introduced, people feel a loss of control (Evans 2001). Change initiatives usually imply a loss of the security that goes with a specific job. In particular, the individually-related specific readiness for change concepts are concerned with the potential 'danger' such as specific readiness: self-efficacy and personally beneficial. This influence on specific readiness; self-efficacy was also mentioned in the research of Eby *et al.* (2000).

In connection with the findings of civil servants who display a high need for security, the low readiness for change level fits in the context. It seems that civil servants revealed a lower readiness for change and a higher need for security level. Again, it fits into the context because the public sector is characterised by high 'security' need concerning the security of employment described in Section 2.4. The results are also in line with

other significant findings about civil servants, such as the negative impact of age and tenure to the organisation on readiness for change in this study.

**Summary of the research objective:** To prove the concept of need for security

Civil servants display a need for security and it influences the readiness for change level. Besides the civil servants, the non-civil servants display a need for security level, too. Even though, it is lower.

In general, the findings confirmed studies i.e. from Salladarre, Hlaimi and Wolff (2011) whereof need for security is of high relevance for the German people. The study conducted by Salladarre, Hlaimi and Wolff (2011) confirmed the highest need for Germany in comparison to other European countries. Need for security will be a part in the new instrument.

### **6.6 Excursus about the demographic variables age and tenure**

Beside the focus on the behaviour of civil servants and non-civil servants concerning change readiness, a further topic of interest is: Age and tenure in the context of readiness for change. The underlying thoughts developed out of the results of the study are that age and tenure reveal a higher impact on readiness for change than the fact of being civil servants or non-civil servants. For this side aspect, several correlations and regressions were calculated.

The sample displayed an age structure of approximately 27% between 30 to 41 years, 35.3% between 41 and 50 years and 24.8% between 51 and 60 years. Concerning the tenure, approximately 13% are less than 5 years at the DB AG, approximately 30% between 5 and 14 years, approximately 20% between 15 to 24 years and 37% between 25 to 34 years.

It should be noted that age as a single variable correlated significantly and negatively to specific readiness for change and not to general readiness for change (Table 6.7). This result is opposed to several other studies such as Pilmental (2008), Hanpachern, Morgan and Griego (1998).

**Table 6.7 Age and readiness for change: Correlation**

		General readiness for change	Specific readiness for change: Self-efficacy	Specific readiness: Appropriateness	Specific readiness: Management support	Specific readiness: Personally beneficial
Age	Pearson Correlation	-0.083	<b>-0.093*</b>	<b>-0.148**</b>	<b>-0.088*</b>	<b>-0.218**</b>
	Sig. (2-tailed)	0.057	0.034	0.001	0.044	>0.001
	N	524	524	524	524	523

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

The regression in Table 6.8 supported the findings and specified the negative and significant impact on older age groups for the topics specific readiness: appropriateness, specific readiness: management support and specific readiness: personally beneficial and not for specific readiness; self-efficacy.

**Table 6.8 General and specific readiness for change: Regression per role, gender and age**

Variable <sup>a</sup>	General readiness for change		Specific readiness: Self-efficacy		Specific readiness: Appropriateness		Specific readiness: Management support		Specific readiness: Personally beneficial	
	Coeff	P value	Coeff	P value	Coeff	P value	Coeff	P value	Coeff	P value
Constant	3.464	<0.001	4.207	<0.001	3.518	<0.001	3.796	<0.001	3.698	<0.001
Civil servant	-0.105	0.123	<b>-0.155*</b>	0.025	-0.109	0.293	0.028	0.760	0.123	0.202
Female	-0.090	0.101	-0.083	0.137	-0.005	0.956	<b>-0.147*</b>	0.044	-0.127	0.103
31 to 40 years	-0.068	0.482	0.041	0.678	-0.133	0.370	-0.236	0.068	<b>-0.303*</b>	0.028
41 to 50 years	-0.005	0.956	0.030	0.755	-0.139	0.342	-0.245	0.056	<b>-0.392**</b>	0.004
51 to 60 years	-0.138	0.196	-0.073	0.499	<b>-0.376*</b>	0.021	<b>-0.309*</b>	0.030	<b>-0.787**</b>	<0.001
Over 60 years	-0.153	0.398	-0.014	0.941	-0.343	0.216	<b>-0.670**</b>	0.006	<b>-0.735**</b>	0.004
Adj. R square	0,011		0,170		0,170		0,009		0,053	

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

a. N=524

### Independent sample t-test for the means per age group and role

Aside from the role, the demographic variable age is often a relevant and significant influencing factor. Both variables are not addressed by the stated hypothesis, but they

are relevant for the interpretation of the data. The results are discussed in Section 6.6. Before the calculation of the regression for age is done in the next paragraph, the influence with the help of t-test is measured.

The independent sample t-test displayed significant results only for the specific readiness: self-efficacy for respondents between 51 and 60 years (Table 6.9) and specific readiness: personally beneficial for persons over 60 years (Table 6.10). It confirmed the influence of age for older age groups. The average commitment to change described by the mean value does not fall generally below the compared mean values (Table 5.10) in the older age groups.

However, the small number of cases makes a generalised statement more complicated.

**Table 6.9 Independent sample t-test: readiness for change per role for age group 51-60 years**

Mean values	Civil servant*	Non-civil servant**	P value of difference
General readiness for change	3.18	3.32	0.232
Specific readiness: Self-efficacy***	<b>3.91</b>	<b>4.18</b>	0.023
Specific readiness: Appropriateness	3.06	3.11	0.757
Specific readiness: Management support	3.47	3.45	0.888
Specific readiness: Personally beneficial	3.05	2.80	0.109

\* N=76

\*\*N=54

\*\*\*. significant at the 0.05 level (2-tailed)

**Table 6.10 Independent sample t-test: readiness for change per role for age group over 60 years**

Mean values	Civil Servant*	Non-civil servant**	P value of difference
General readiness for change	3.23	3.25	0.959
Specific readiness: Self-efficacy	4.15	3.90	0.510
Specific readiness: Appropriateness	3.25	2.68	0.190
Specific readiness: Management support	3.20	3.00	0.693
Specific readiness: Personally beneficial***	<b>3.29</b>	<b>2.40</b>	0.033

\* N=4

\*\*N=15

\*\*\*. significant at the 0.05 level (2-tailed).



Further details are shown in Appendix B Independent sample t-test.

Complementary to the previously reviewed demographics, the further items tenure and education were added. A correlation was used for tenure (Table 6.11):

**Table 6.11 General and specific readiness for change: Correlation of tenure**

		Tenure to the organisation <sup>a</sup>
General readiness for change	Pearson Correlation	<b>-0.116<sup>**</sup></b>
	Sig. (2-tailed)	0.008
Specific readiness: Self-efficacy	Pearson Correlation	<b>-0.118<sup>**</sup></b>
	Sig. (2-tailed)	0.007
Specific readiness: Appropriateness	Pearson Correlation	<b>-0.181<sup>**</sup></b>
	Sig. (2-tailed)	<0.001
Specific readiness: Management support	Pearson Correlation	<b>-0.102<sup>*</sup></b>
	Sig. (2-tailed)	0.020
Specific readiness: Personally beneficial	Pearson Correlation	<b>-0.222<sup>**</sup></b>
	Sig. (2-tailed)	<0.001

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

a. N=523

Tenure to the organisation correlated negatively and significantly with all readiness for change concepts which might result from the fact that tenure stands for a long working experience. During their work-live, these respondents tried out many ways to solve problems. The 'try and error experience' might lead to a lower readiness for change.

Education as an ordinal variable was calculated with the Spearman's rho method (Table 6.12):

**Table 6.12 General and specific readiness for change: Spearman's rho of education**

		Education
General readiness for change	Correlation Coefficient	<b>0.104<sup>*</sup></b>
	Sig. (2-tailed)	0.017
Specific readiness: Self-efficacy	Correlation Coefficient	0.062
	Sig. (2-tailed)	0.156
Specific readiness: Appropriateness	Correlation Coefficient	0.065
	Sig. (2-tailed)	0.139
Specific readiness: Management support	Correlation Coefficient	0.051
	Sig. (2-tailed)	0.244
Specific readiness: Personally beneficial	Correlation Coefficient	<b>0.119<sup>**</sup></b>
	Sig. (2-tailed)	0.007

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

a. N=523

The analysis of the role of civil servants and non-civil servants in relation to age and readiness for change revealed significant differences only for two cases (Table 6.9, Table 6.10). Finally, the one-sample t-test for need for security only confirmed significance for age in general per role (Section 5.2.9; Table 5.30), but not broken down to the age groups per role (Appendix E ). The regression in Section 5.2.9 (Table 5.32) confirmed the influence of older age groups on need for security, which is another aspect in the context of the discussion about age and gender and supports the findings of Madsen, Miller and John (2005). Age and readiness for change were negatively and significantly correlated, as well as age and need for security which was partly positively and significantly correlated. Age has a negative impact on readiness for change. The results concerning the differences of civil servants and non-civil servants should be looked at again because of the small number of cases.

The second variable tenure correlated significantly and negatively with general and specific readiness for change (Table 6.11). This impact of tenure and readiness for change has been widely reported in the existing literature (Armenakis, Harris and Mossholder 1993; Van Dam, Oreg and Schyns 2008). A positive impact of tenure and age calculated with the help of a correlation is shown in Table 6.13:

**Table 6.13      Age and tenure to organisation: Correlation**

		Age
Tenure to the organisation	Pearson Correlation	0.752**
	Sig. (2-tailed)	<0.001

\*\*. significant at the 0.01 level (2-tailed).

The results suggest that the longer persons work for the organisation and the older they get, the lower the readiness for change level. While P-O fit plays an important role in the discussion about readiness for change, tenure and age might be also of relevance.

As mentioned above, the concept need for security might be also of interest in this constellation. It is suggested to do further research about age, tenure and need for security.

### 6.7 Implications of the study findings

In summary, the research aims of the study were:

- To develop and evaluate an instrument to gauge readiness for change on an individual level for civil servants and non-civil servants in the public sector in Germany
- The instrument will be based on existing readiness for change models extended by the concept of P-E fit
- The concept of PSM and the concept of need for security will be part of the instrument

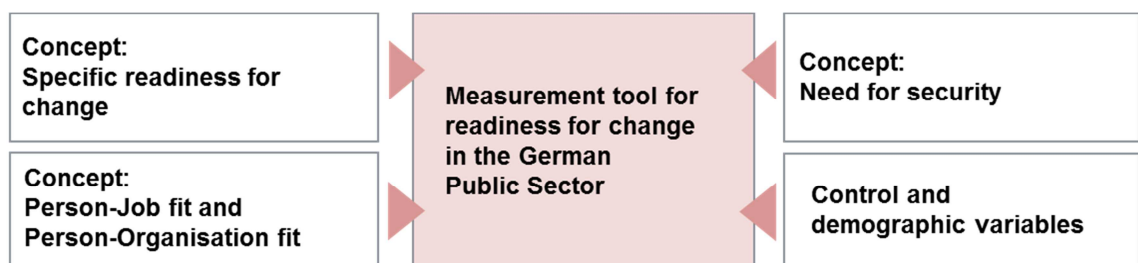
The main purpose of the study was the extension of existing readiness for change models by the aspects of the public sector that included the employee groups' civil servants and non-civil servants. The relevant factors were analysed in Chapter 5 and interpreted in Chapter 6.

### **Implication for the readiness for change management measure instrument**

The overall aim of this research was to develop a list of items that meet the requirements to measure readiness for change and the antecedences on readiness for change of civil servants and non-civil servants. The development process started with the definition of the influential readiness for change themes that emerged in the previous chapter. These factors served as the guidance to develop and test items that would be included in the readiness for change questionnaire.

The final instrument to measure readiness for change contains three important topics: (1) the readiness for change model itself, (2) the knowledge of the influencing concepts on readiness for change in the public sector, and (3) the choice of the control and demographic variables.

Figure 6.2 helps to visualise the findings and to present the final measurement tool:



**Figure 6.2 Research framework and final results**

In detail:

- (1) For further research on the topic readiness for change, the author suggests the use of the specific readiness for change variables divided into the four sub concepts: self-efficacy, appropriateness, management support and personally beneficial. The measurement of the general readiness for change is not recommended. Major reasons for the focus on specific readiness for change have been already mentioned: significant results of the correlations and regressions speak for it, low benefit of the results of general readiness for change and the response bias due to the length of the questionnaire.
- (2) For the study, two distinct fields of influencing concepts have been identified prior to the study, namely P-O and P-J fit as well as need for security. The concept of PSM exists in Germany and could be proved for the first time, but is not of high relevance for the readiness for change measurement in Germany.
- (3) Several influencing factors on readiness for change are confirmed in the study which should be part of further studies to evaluate the results of the readiness for change level: change impact, job satisfaction, exploited potential and organisational commitment. Furthermore, the demographic variables are important, especially the question concerning the role in the organisation such as civil servant or non-civil servants, but also age and gender.

Due to the topics, the final questionnaire consists of the items (Table 6.14):

**Table 6.14 Instrument to measure readiness for change in the public sector**

Topic	Subtopic	Items
(1) Special readiness	Self-efficacy	I am confident that I perform successfully after the last change was made.
		I was intimidated by all the tasks I had to learn because of this change.
		When we implemented the last change, I feel I can handle it with ease.
		I have the skills that are needed to make the last change work.
	Appropriateness	When I set my mind to it, I learned everything that is required when the last change was adopted.
		It didn't make much sense for our organisation to initiate the last change.
		There are a number of rational reasons for the last change to be made.
		The time we spent on the last change should have been spent on something else.
		I think that our organisation was benefited from the last change.
		The last change improved our organisation's overall efficacy.
		The last change matched the priorities of our organisation.
		Our organisation won some valuable assets since we adapted the last change.
	Management Support	Our management has put all their (physical) support behind the last change effort.
		Our management was and is committed to the last change.
		I think we spent a lot of time on the last change, although the management didn't even want it implemented.
I am sure our management changed their mind before we actually implemented the last change.		
Personally beneficial	I believe management has done a great job in bringing about the last change.	
	I am worried I will lose some of my status in the organisations when this change is implemented again.	
	The last change gave me new career opportunities.	
	The last changes make my job easier.	
	When the last change is finally implemented, I believe there is a lot for me to gain.	
	In the long run, I feel it will be worthwhile for me if our organisation adopts the changes.	
(2) Person-Job fit		There is a good match between the requirements of this job and my skills.
		My job fulfils my expectations of a job.
		The job that I currently hold gives me just about everything that I want from a job.
	(2) Person-Organisation fit	
		I am able to maintain my values at this company.
(3) Need for security		Security becomes a central topic in my life.
		When I chose my career, I paid more attention on the work content than on job security.
		It is important for me to know that my job is secure.
		I am concerned about the idea being without work for a period of time.
(3) Control variable	Change Impact	The change had a major positive impact on my job and my job conditions.
	Change Impact	The change had a major negative impact on my job and my job conditions.
	Job satisfaction	I am highly satisfied with my job.
	Exploited potential	I am able to unfold my individual potential performance in my job.
	Organisational commitment	I like working for the DB very much.
	Organisational commitment	My identification with the DB AG has positively changed during my employment.
	Organisational commitment	My identification with the DB AG has negatively changed during my employment.
(3) Demographics	Gender	Male/Female
	Age	Under 20 years/21- 30 years /31-40 years /41-50 years/51-60 years/ Over 60 years
	Position	Employee/ manger/ assigned civil servant/civil servant on leave/civil servant in a managing position

The study was designed to develop a new instrument that measures readiness for change by the integration of the strengths of existing instruments while accounting for the factors that may influence readiness for change targeting civil servants and non-civil servants in the environment of the public sector. The instrument should be easily useable, meet the special requirements of the public sector surroundings, consistent with the theory of change and meet the standard for measurement instrument e.g. reliability. The usage of the instrument by conducting a survey is recommended frequently in the organisation e.g. to generate a general overview of change readiness in the organisation and much more when changes await the organisation in the upcoming months. The instrument is especially designed for the demands of the public sector environment.

### **6.8 Chapter summary**

Chapter 5 covered the findings of the analysis and the answers to the research aims, the research objectives and hypotheses were discussed. The author tackled the research objectives and hypotheses one by one and tried to support the findings by a further literature review. The findings answered the stated research objectives and hypotheses for the research topic readiness for change, P-O fit, P-J fit, PSM and need for security and revealed differences between civil servants and non-civil servants.

### **Readiness for change**

The author derived the higher readiness for change level of non-civil servants at the DB AG from the low intrinsic willingness of civil servants to change the circumstances and conditions they work in. The NPM wave brings with it a demand for more market- and customer-orientation in the public sector. The civil servants do not really feel pressured by the organisation DB AG to change their behaviour or thinking. Researchers have been discussing the influence of the work environment on the mindset and setting of the civil servants and non-civil servants. The debate is still continuing.

The findings of the specific readiness for change concerning civil servants and non-civil servants which are significant but display minor differences, point in the same direction. Self-efficacy (strength of one's belief in one's own ability to complete tasks and reach goals) and appropriateness (feeling that change benefits the organisation after the implementation) out of the sub concepts public interest and compassion scored lower for civil servants. As long as the extrinsic conditions such as lifelong tenure, etc. for civil

servants do not change, the intrinsic motivation and the related low readiness for change will remain the same.

### **Person-Organisation fit and Person-Job fit**

The change readiness of civil servants is significantly correlated with the P-O fit and (partly) with the P-J fit. An increase of P-O fit and P-J fit has a positive impact on the readiness for change level.

The identification with the organisation for civil servants at the DB AG is higher as opposed to non-civil servants. The findings confirm the expectations as it has been proven that PSM positively contributes to the compatibility between individuals and public organisation (Bright 2008).

Non-civil servants at the DB AG have a higher P-J fit than civil servants. The presumption that the job choice for non-civil servants is also influenced by the content of the job is verified. For both civil servants and non-civil servants, it is valid that high value congruence between the job and the expectation of the civil servant or non-civil servant also scored high on the readiness for change level.

Both P-O fit and P-J fit play a major role concerning the effort of implementing changes successfully in the organisation.

### **Public Service Motivation**

The PSM level of civil servants is higher than the one of the non-civil servants and the findings also meet this expectation. The underlying assumption extracted from the literature has been confirmed. Even so, significance was revealed only for the sub concept public interest. Public interest as a part of the PSM stands for the interest to provide public services for all people at the same standard and leads to a major motive, which is loyalty to duty. These characteristics can be summarised under the term Public Service Ethos (PSE) and this ethos plays an important role in German-speaking countries.

PSM also has an important role in the literature on public management. PSM has a major impact on a variety of variables such as job satisfaction, organisational commitment, reward preference, individual and organisational performance. Additionally, PSM influences the readiness for change for civil servants and non-civil servants and this is an important result of the study.

All findings summed up, lead to the conclusion of the existence of two different cultures in one company. On the one hand, the non-civil servants who can be characterised by a high readiness for change and a proven but lower PSM level. The readiness for change level of non-civil servants can be mainly influenced by the increase of the P-J fit and parts of the PSM. On the other hand, the civil servants display a low readiness for change and a proven high level of PSM. The readiness for change level is correlated with the P-O fit and parts of the PSM.

### **Need for security**

Need for security is a key driver for the readiness for change level and of high importance for civil servants. The results of the stepwise regression of the readiness for change: need for security correlated almost with all four sub concepts of readiness for change.

Finally, the author presented the recommended readiness for change model adjusted to the demands of the public sector. The final Chapter 7 concludes the thesis.



### 7 Conclusion

This chapter summarises the entire research outcomes. It includes the conclusion of the research study, verification of level of success in achieving the defined proposal attributed by the research aim, objectives and hypotheses as well as the contribution, limitations and recommendations for future research.

#### 7.1 Introduction

At the beginning, this section provides an account on whether the aim of the research has been achieved and how it has been accomplished. The next section makes a note on the contribution and limitations encountered in the study. This will be followed by a section that includes recommendations in the light of the research findings. Finally, the chapter covers the suggestions to carry out further research based on the research that was already done, as well as on the conclusions (**Fehler! Verweisquelle konnte nicht gefunden werden.**).

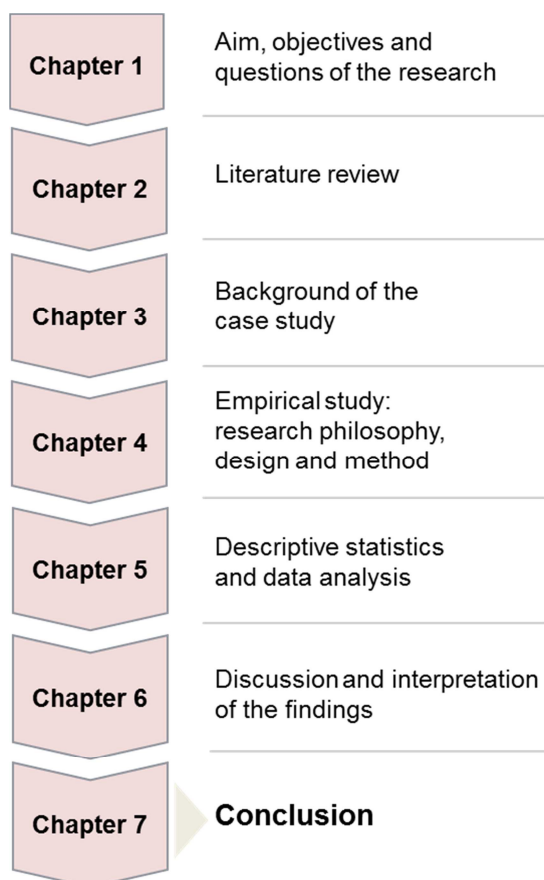


Figure 7.1 Research process: Chapter 7

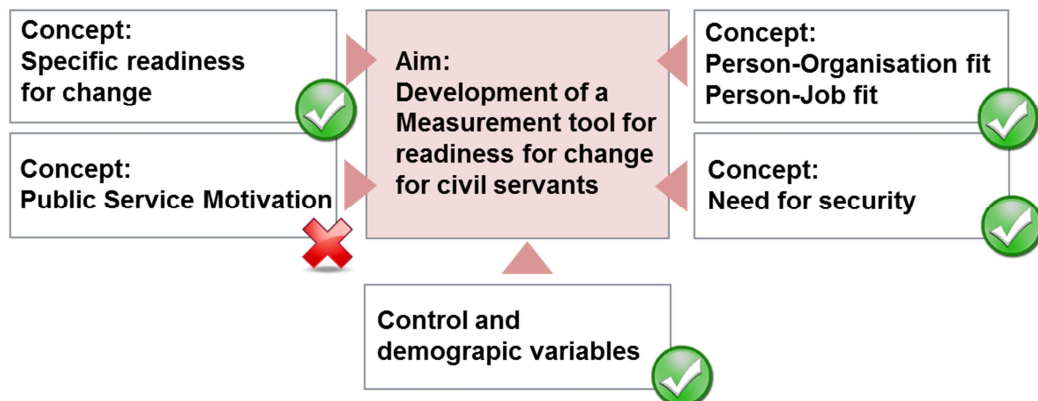
## **7.2 Achievement of aim**

The overarching aim of the study was outlined in Chapter 1 and was stated as: to develop and evaluate an instrument that can be used to gauge readiness for change on an individual level in the public sector in Germany.

The instrument is based on existing readiness for change models and was extended by the umbrella concept of the P-E fit. The concept of PSM and the concept of need for security were included in the study.

It can be summarised that the research aim, research objectives and hypotheses are fully accomplished through the conducted study.

The research frame visualises the overarching research aim and the results of the study (Figure 7.2):



**Figure 7.2 Research framework and final results**

## **7.3 Research contributions**

The study and the results are in particular promising because research on differences in the internal context of public and private sector organisation is largely unknown (Boyne 2002). The study delivers contributions to both theory and practice, whereby the practice findings are a larger part.

### **7.3.1 Contribution to theory**

The contribution to the theory of the research topic readiness for change is important because the results are new in the German context. For the first time, German civil servants and non-civil servants working on the same team, side by side have been asked about their opinion towards readiness for change, P-O fit, P-J fit, PSM and need

for security. The study reviews and confirms the existence of different cultures and mindsets in one company in order to determine whether there is a different level of readiness for change of civil servants and non-civil servants.

Furthermore, there is a critical issue concerning the measurement of readiness for change. To avoid any misjudgement of the participants, a change of reference and change occasions should be provided. This recommendation counts for the used model (specific readiness) and the measurement scale. It facilitates the classification of the answers for the participant and supports the process of analysis and interpretation for the interviewers.

Third, a further issue concerns the P-O fit and P-J fit concepts. The concepts inspired a large amount of research conducted through theoretical and practical studies. Again, the civil servants and non-civil servants working in the same public sector organisation confirm differences in their P-O fit and P-J fit, which supported the existence of two cultures and mindsets in one company. The findings further indicate that the readiness for change level of civil servants and non-civil servants is inter alia a result of the organisational environment. It is therefore important that the organisations find ways of encouraging the employees in the work environment, work conditions and work content.

The forth and a major point is the effect on the PSM research. Motivation is a critical success factor for an organisation in the private and public sector. Hammerschmid, Meyer and Egger-Peitler (2009) mentioned the lack of PSM studies in Germany. This study delivers knowledge about the existence of PSM in Germany for the first time and proved that the PSM level of civil servants is higher than the level of non-civil servants. However, the PSM structure is not generally applicable to the German public sector as seen by the results. It is recommended to conduct further research on this topic.

Fifth, the author stated the conclusion that the PSM acts as antecedence to readiness for change. The context of PSM and readiness for change is new in the PSM research field and highly relevant for the public sector management. In times of NPM, change readiness is essential for organisations.

The last field is the concept of need for security. Need for security is a motivational driver especially for civil servants at the DB AG. The question has not been answered as to whether civil servants have a predisposition towards security or the need for security is a result of the working condition. Nevertheless, need for security plays in the discussion as a pre-requisite for readiness for change an important role which is a new theoretical aspect.

### **7.3.2 Contribution to practice**

The findings offer practical relevance for the human resource department of the DB AG, especially concerning the topics of recruitment, human resource management (including the socialisation and integration of the new non-civil servants), motivation factors and incentive systems with influences on the company culture and change behaviour.

Starting with the topic recruitment, the human resource management should be aware that the civil servants and non-civil servants who are already working for the DB AG display a PSM level. With the help of instruments for the selection of personnel such as at an assessment centre, the human resource department has the opportunity to evaluate the values and the PSM level of the candidates. As written in Section 6.3, a high PSM level has a positive impact on several characteristics such as the job satisfaction (Norris 2004; Steijn and Leisink 2005), performance (Naff and Crum 1999) and organisational commitment (Kim 2005) and of course, readiness for change. While a selection of research studies see a direct relationship, latest research from Bright (2008) found out that P-O fit serves as an intermediate variable between PSM and performance. Beside the PSM level, the P-O fit is of high importance also because of the positive impact on company identity and readiness for change. Due to the special situation of the DB AG employing both civil servants and non-civil servants, the author sees the relevance of an intensive personal interview with the candidate beside the assessment centre interview to explain the public sector values and the requirements the DB AG is facing as a privatised, but formerly publicly owned company.

For the human resource management in practice, several fields of action appear to be relevant: the socialisation and integration of the new employees and the human resource development. It is very important for the DB AG that new employees adapt the values of the organisation and again, it is necessary to inform them about the special situation of the DB AG. This can be done with the help of training courses and workshops concerning the DB AG values, mentoring programs and it is also of course, the duty of the management to make these values known. To this end, it might be necessary to sensitise the management about these issues. The aim of this measure is to increase the PSM and the P-O fit. Furthermore, to improve the organisational performance, attempts could be made to match civil-servants and non-civil servants with specific jobs where P-O fit and P-J fit is high.

An important responsibility of the human resource department is the motivation and incentive scheme. The PSM research gains relevance in the context of designing incentive schemes. The current personnel research concentrates on intrinsic and extrinsic motivation factors and discusses the relevance of performance-based remuneration models. The relevance of PSM, especially the focus on public interest is emphasised with the help of this study; now it is important to use this knowledge for a target group oriented incentive scheme. The orientation on public interest should be a part of the incentive scheme for civil servants. The increase of PSM can help to realise the corporate goals, which are usually and in the case of the DB AG, linked to a change program. The incentive scheme should follow the values of the organisation and be directed towards the individual needs of the civil servants and non-civil servants. The sustainability of performance-based remuneration in the public sector is controversial and in the eyes of the author, not useful for civil servants.

Part of the daily human resource management is the implementation of individual or organisational changes. With the result of the study and the new readiness for change model, the human resource department is able to measure (again if necessary) the individual level of readiness for change of civil servants and non-civil servants. The knowledge that civil servants and non-civil servants display a different level of readiness for change supports the attempt to develop individually-tailored human resource management and development tools. It increases the efficiency of the human resource work and supports the implementation of necessary changes.

The overarching finding is the existence of two cultures: the civil servants and non-civil servants in the company. Two cultures lead to the need of a need-oriented and a culturally sensitive personnel development. Beside the common variety of professional groups ranging from the engine driver to the chairman, the DB AG culture displays the additional subculture of civil servants who also work in these same professional groups. As seen in the findings in Chapter 5, civil servants are different in their mindset concerning motivation, P-O fit and P-J fit, need for security and readiness for change. To accept this additional cultural difference and to focus the human resource management on it is a new challenge for the human resource department of the DB AG. Right from the beginning of the privatisation, the DB AG tried to pursue the goal of an equal treatment for both types of employees. The study shows that this is not a need-oriented human resource management. A value-based system is necessary to increase the PSM level of civil servants and non-civil servants, especially since this influences the change readiness of both groups. Furthermore, the DB AG should be proud of this uniqueness and understand it as a part of a broader corporate culture.

At least, the argumentation with the findings of the study is fundamental for the human resource management of the DB AG to compete successfully in the challenging market that the DB AG is operating in. Moreover, the DB AG should accept this fact as a heritage and not take it as a burden because this 'burden' represents about 46,000 civil servants out of a work force of about 300,000.

To share and transfer the findings to other companies are possible, necessary and recommended. The mentioned conclusions in practice for the topics recruitment, human resources management (including the socialisation and integration of new employees), motivation factors and incentive systems are helpful and inspiring. The results of the civil servants should be adjusted to the organisation.

### **7.4 Limitations of the study**

The study suffers from a number of limitations starting with the conception of the scales, through the data collection, right up to the methodology.

The sample can be questioned. One primary limitation is the inability to randomly sample the entire population of civil servants and non-civil servants. Instead of the entire population, a sample was used. The study was conducted in headquarters of the passenger transport due to the requirements of the works council. The lack of general usability can be a critical point, because it is a study of a single case represented by the headquarters of the DB AG. Mentioning that a transfer to other organisations is possible, it is not easily possible due to the specific context as a formerly publicly owned and now privatised company of the DB AG.

Due to the limited access to the organisation, the data was collected in an online survey which raises the concern about a mono-method bias. This is because the only method used may introduce a bias and the answers result out of a single source, i.e. a questionnaire. A better result would be generated by the use of a multiple source.

Criticism can arise not only from the single source limitation, but also from the use of the online method. The author realised (with the help of some direct feedback from several interviewees) that not all headquarter units of the passenger transport had access to the internet. For reasons of cutting costs, some civil servants and non-civil servants were cut off from the internet. Overall, it can be said however, that the structure of the group who did answer the questionnaire mirrored the structure of the headquarters.

Additionally, questionnaire survey cannot accurately control many variables for an individual's situation. The results and estimates of the study are based on civil

servants' and non-civil servants' perception. Surveys cannot probe deeply into respondents' opinions and feelings which would be helpful in taking a more comprehensive look at change readiness, P-O fit, P-J fit, PSM and need for security. An additional bias in the context of only using surveys is the self-report of the survey.

The cross sectional character of the study might be another bias. The survey data was only collected once, after the change had been underway. To unravel the organisation change process, the collection of data before, after and during the organisational change would be required (Van de Ven and Huber 1990). Furthermore, because the survey was administered several months after the change was introduced, it cannot be precluded that, at least to some extent, the findings were influenced by retrospective deliberation. However, as the respondents were not aware of the research hypotheses, there is no reason to believe that their retrospective rationalising would entirely overlap with the rationale of this study.

The study was undertaken in different units within the headquarters of the passenger transport division of the DB AG. Changes take place in all of these units continually, but not at the same time and not on the same level. The results of the study display the individual perception of the participating civil servants and non-civil servants of a change in their unit at that moment of time.

The research objectives and hypotheses raised in this study were derived from a review of the literature on resistance to change and readiness for change and were not completely tailored to the particular unit of the DB AG. The scale used for the survey can be questioned due to the fact that no comparative German studies of these topics exist at the moment.

The author sees herself as a positivist researcher and is aware of this bias as well. She accepts the limitation as part of the research results.

### **7.5 Implications for future research**

The implications for future research can be divided into a part concerning the research topics and the methodology.

While a huge amount of literature concerning P-O fit, P-J fit and need for security already exists, and furthermore, the topic has been already thoroughly explored, the most important implication is the conduction of a deeper research in the field of readiness for change and PSM in Germany.

The study gained statistically significant results. Nevertheless, the results should be tested in further German organisations to confirm them. The readiness for change and especially the PSM research has to be newly organised from the ground in Germany and this study can be used as the basis. Due to the lack of comparable data in Germany, studies in organisations that are active in the public and private sector, as well as being privatised public and privately owned companies are recommended for further research. All selected organisations whether from the public management or the private sector should display the speciality of the employment of civil servants and non-civil servants. Of higher interest are German organisations such as the Deutsche Lufthansa AG, Deutsche Telekom AG and Deutsche Post AG who have historically faced and are facing the same challenges as the DB AG. It is the aim to measure the readiness for change and PSM level of the civil servants and non-civil servants to get an orientation about the levels. This foundation would help to define a readiness for change and PSM level in Germany and would make it possible to participate in worldwide studies.

To deepen the important topic of readiness for change, further studies with a focus on the influencing factors on readiness for change should also follow. Again, the context of a dualism of civil servants and non-civil servants should be ensured. It has to be proven whether different readiness for change levels are present in the public and private sector by the use of only one readiness for change measurement model. The author used two models in order to test which model fits better. The decision was then made to use the general readiness for change and the specific readiness for change scale in order to measure if the readiness for change level is present and if they display the same results. The problem which appeared was the volume of items. Interviewees might get tired of the item battery, but it supported the comparison of the results with other studies.

The worldwide PSM studies suffer from the inconsistency in scales, as well. Some researchers used the complete versions of the Perry scale (1996), some researchers shortened the scale to be able to do an international comparison. Again, it makes it difficult to compare the results. Parts of the PSM sub concepts might not fit to the German culture, such as policy-making or compassion. Other facts like the public service ethos are much more pronounced in Germany than in other countries due to other conditions and history of civil service.

As mentioned before by Hammerschmid, Meyer and Egger-Peitler (2009) point out a problem that applies for all scales translated into the German or other languages. The translation, meaning and understanding of the items forming the scales might not fit to



the cultural background of the respondents. In order to address the German culture, the author deleted several questions from the scale (described in Section 3.5).

The author worked out several suggestions for further research concerning the methodology. The study was conducted at the headquarters of the DB AG, which is characterised by well-educated office workers. About 2,500 out of about 300,000 individuals were reached and asked to participate in the survey. To gain a complete picture of the situation in the whole organisation of DB AG, the survey should be expanded. It can be assumed that the differences between civil servants and non-civil servants become greater in particular in some specific professional groups such as engine drivers and conductors. These professional groups work nationwide; they are shift workers and are seldom in contact with office workers or team leaders from the headquarters. In consequence, to get in contact with these professional groups is difficult and to convey a message concerning an upcoming change is even much more difficult. In particular, the engine drivers and conductors are in contact with the public and so they work as ambassadors for the DB AG. To increase their readiness for change could have a direct impact in their behaviour towards the customer. Referring to NPM elements in Section 2.3.2, the introduction of customer orientation is one of the basic principles.

Furthermore, it would be interesting to conduct a comparable study in a longitudinal context. Smaller changes are part of the daily business, but major changes appear about every two years on an average and last for several months. Major changes are reorganisations of the structures that usually come along with dismissals. The perception and personal approach towards change and the impact on PSM might be a further research field. The discussion about the time horizons leads to the topic of methodology. Here as well, different research methodology should be applied such as qualitative methods to gain a deeper understanding of the concepts.

As described before, motivation is essential for an organisation and in particular for an organisation in change. The theoretical findings concerning the differences of civil servants and non-civil servants should be converted into practice. Further studies deliver the motivational instruments which can be used to increase the readiness for change and PSM level individually for both civil servants and non-civil servants.

### **7.6 Chapter summary**

The final chapter contains the overall view on the achievements of research aim, the research objectives and hypotheses, the contribution to theory and practice, the limitations and the recommendations for further research.

The stated aim of the study was met. The research aim, research objectives and hypotheses were answered. The most important and overarching statement which can be finally made is the differences between civil servants and non-civil servants working at the DB AG in their level of readiness for change, identification with DB AG and the job, as well as their motivation and mindset towards work.

Of course a variety of limitations accompanied the study. The development of the scale, the data collection and the analysis can be subjects for critical questions. Furthermore, the author suggests additional studies in the research field readiness for change and PSM. Research in Germany with a focus on change in the public sector and the implication on the civil servants and non-civil servants is lacking. The special case of former publicly owned and nowadays privatised companies and the impact on the civil servants and non-civil servants has not been investigated yet. The PSM research in Germany has to be started right from the beginning, while existing studies in the world should give an orientation.

Beside the contribution to the theory, the findings for the practice are highly important for the DB AG. The human resources department of the DB AG needs to adjust its work processes and be more customer-oriented. Part of the customer-orientation is the knowledge about the needs and motivational drivers of the employees. With the help of the supervisor, the human resource department is required to cluster the needs of the employees, to develop relevant human resource tools and answer the demands of the employees. This is a feasible and necessary concept.

If the DB AG is going to be successful in the increasingly competitive transport market in Europe, it should implement the major points of the NPM movement and be able to face the challenges with the help of motivated and DB AG oriented team of civil servants and non-civil servants.

## **Appendices**

### **Appendix A Questionnaire**

#### **Content of the email**

Dear colleagues,

Don't we all know this unpleasant feeling in the stomach region when changes are about to happen? Restructurings, reorganisations, redirections of business units, own changes in job position organisational, structural, and task-related changes are an integral part of our professional life at DB AG.

How do YOU deal with changes? Do you perceive them as being necessary or as rather annoying? Do they motivate you or are they a needless burden?

I'm interested in your opinion of and attitude towards changes and motivational factors. My name is Britta Oehrich, I'm part of the marketing team at DB Regio Bus, and I have also recently started a research project on the side. In collaboration with Technical University Mittelhessen, and supported by DB AG, I'm conducting research on the subject of change and motivation. Changes in our professional and private lives affect each of us differently; in fact the individual impact is dependent on the actual change occurring, the individual's perception of it, as well as his or her personal attitude towards change in general.

And I need your help in order to identify these differences! I have attached a link to my survey; I would like to ask you to click the link and answer the questions – it will take you about 10-15 minutes. Please note: participation is voluntary, your answers will be evaluated anonymously, and I adhere to the requirements of the company works council, the company staff data protection rules, and the DB AG.

It would be great if you took part - your answers are important to me! Once the research project is finished, the results and my recommended course of action will be made available to DB AG for potential implementation.

Many thanks in advance!

Yours sincerely,

Britta Oehrich

**Survey text after activation of online link**

Dear colleague,

I (Britta Oehrich, DB Regio Bus) am grateful to you for taking the time to participate in my survey. I have divided the survey into several topic groups which I will each introduce with a short explanatory title.

How do you fill in the survey?

Your answers in this survey relate to your own personal opinion, thus you are requested to express your opinion in every answer.

Please read through every question and answer each of them swiftly. As far as possible please don't leave out any of the questions.

With each question you get five answer options: 'agree', 'somewhat agree', 'neither agree nor disagree', 'somewhat disagree', 'disagree'. Please answer each question by clicking the box after your chosen answer option.

During the survey you can go forward and backward through the web pages.

Important information regarding voluntariness and anonymity: your participation is voluntary. Your answers will be treated confidentially and evaluated anonymously. It is technically impossible for participants to be identified through their answers. This procedure adheres to the agreement between the company works council, the company staff data protection rules, and the employer.

If you have any questions whilst filling in the survey, or are interested in the research results, please don't hesitate to get in touch:

- via email: [b\\_oehrich@gmx.de](mailto:b_oehrich@gmx.de) or [Britta.Oehrich@deutschebahn.com](mailto:Britta.Oehrich@deutschebahn.com)
- via phone: 0176/96 61 90 79 oder 069/265 59453

Thank you very much for taking part!

Yours, Britta Oehrich

## Appendix A Questionnaire

These questions deal with your general attitude towards change.

	Answer options				
	Agree	Some- what agree	Neither agree nor disagree	Some- what disagree	Disagree
<b>General readiness for change</b>					
I'll take a routine day over a day full of unexpected events any time.					
I generally consider changes to be a negative thing.					
When I am informed of a change, I am a little bit concerned.					
Changing plans seem like a real hassle to me.					
I rarely change my mind.					
What happens to me in the future, mostly depends on me.					
I avoid changes even when they are good for me.					

## Appendix A Questionnaire

When answering the following questions I would like to ask you to bring to mind the last crucial change that you were affected by within the last few years, e.g. a reorganisation of your business unit.

	Answer options				
	Agree	Some- what agree	Neither agree nor disagree	Some- what disagree	Disagree
<b>Self-efficacy</b>					
I am confident that I perform successfully after the last change was made.					
I was intimidated by all the tasks I had to learn because of this change.					
When we implemented the last change, I feel I can handle it with ease.					
I have the skills that are needed to make the last change work.					
When I set my mind to it, I learned everything that is required when the last change was adopted.					
<b>Appropriateness</b>					
It didn't make much sense for our organisation to initiate the last change.					
There are a number of rational reasons for the last change to be made.					
The time we spent on the last change should have been spent on something else.					
I think that our organisation was benefited from the last change.					
The last change improved our organisation's overall efficacy.					
The last change matched the priorities of our organisation.					
Our organisation won some valuable assets since we adapted the last change.					
<b>Management Support</b>					
Our management has put all their (physical) support behind the last change effort.					
Our management was and is committed to the last change.					
I think we spent a lot of time on the last change, although the management didn't even want it implemented.					
I am sure our management changed their mind before we actually implemented the last change.					
I believe management has done a great job in bringing about the last change.					
<b>Personally beneficial</b>					
I am worried I will lose some of my status in the organisations when this change is implemented again.					
The last change gave me new career opportunities.					
The last changes make my job easier.					
When the last change is finally implemented, I believe there is a lot for me to gain.					
In the long run, I feel it will be worthwhile for me if our organisation adopts the changes.					

## Appendix A Questionnaire

In order to be able to better understand and interpret your answers regarding your willingness for change, please tick the respective box on how strongly you were affected by the change

	Answer options				
	Agree	Some- what agree	Neither agree nor disagree	Some- what disagree	Disagree
<b>Impact of the change</b>					
The change had a major positive impact on my job and my job conditions.					
The change had a major negative impact on my job and my job conditions.					

## Appendix A Questionnaire

Now we are asking about your attitude towards topics such as general welfare and social responsibility. I would like to find out whether there is a connection between these topics and willingness for change.

	Answer options				
	Agree	Some- what agree	Neither agree nor disagree	Some- what disagree	Disagree
<b>Policy-making</b>					
Politics is a dirty word.					
The compromises that are involved in the public policy making don't appeal to me.					
I don't care much for politicians.					
I associate politics with something positive.					
<b>Public interest</b>					
I consider public service civic duty.					
I unselfishly contribute to my community.					
Meaningful public service is very important to me.					
I would prefer seeing public officials do what is best for the whole community even if it harmed my interests.					
<b>Compassion</b>					
I have a little compassion for people in need who are unwilling to take the first step themselves.					
It is difficult for me to contain my feelings when I see people in distress.					
I seldom think about the welfare of people I don't know personally.					
<b>Self-sacrifice</b>					
Making a difference in society means more to me than personal achievements.					
I feel people should give back more than they get from it.					
I am a person who would risk personal loss to help someone else.					
I believe in putting civic duty before self.					
I am prepared to make sacrifices for the good of society.					



## Appendix A Questionnaire

In the following questions we would like to know more about your attitude towards security, your work content, and your business unit.

	Answer options				
	Agree	Some- what agree	Neither agree nor disagree	Some- what disagree	Disagree
<b>Need for security</b>					
Security becomes a central topic in my life.					
When I chose my career, I paid more attention on the work content than on job security.					
It is important for me to know that my job is secure.					
I am concerned about the idea being without work for a period of time.					
<b>Person-Job fit</b>					
There is a good match between the requirements of this job and my skills.					
My job fulfils my expectations of a job.					
The job that I currently hold gives me just about everything that I want from a job.					
I am highly satisfied with my job.					
<b>Person-Organisation fit</b>					
My values are very similar to the values and goals of our organisation.					
I am able to maintain my values at this company.					
I will work for the DB in five years from now.					
I am able to unfold my individual potential performance in my job.					
I like working for the DB very much.					
My identification with the DB AG has positively changed during my employment.					
My identification with the DB AG has negatively changed during my employment.					

Finally I would like to ask you to provide some statistical data. Please fill these in completely. Please note: we are not able to identify you!

<b>Gender</b>	
Female	
Male	
<b>Age</b>	
Less than 21 years	
21 to 30 years	
31 to 40 years	
41 to 50 years	
51 to 60 years	
Over 60 years	
<b>Education</b>	
High school or associate's degree	
Bachelor's or master's degree	
Others	
<b>Condition of contract</b>	
Assigned civil servant	
Civil servant on leave	
Civil servant in a managing position	
Employee (non-civil servant)	
Manager (non-civil servant)	
<b>Tenure to the organisation</b>	
Less than 5 years	
5 to 14 years	
15 to 24 years	
25 to 34 years	
Over 34 years	

## **Questionnaire in German**

### **Anschreiben per Mail bei Versand der Teilnahmeaufforderung**

Sehr geehrte Kolleginnen und Kollegen,

kennen wir nicht alle das mulmige Gefühl in der Magengegend, wenn es heißt, Veränderungen stehen an? Umstrukturierungen, Reorganisation, Neuausrichtung der Organisationseinheiten, eigener Stellenwechsel – organisatorische, strukturelle und aufgabenbezogene Veränderungen sind ein fester Bestandteil unseres Berufsleben bei der DB AG.

Wie gehen Sie mit den Veränderungen um? Haben Sie den Eindruck, Veränderungen sind notwendig oder lästig? Fühlen Sie sich durch Veränderungen motiviert oder sind Veränderungen ein überflüssiger „Kropf“?

Ihre Sichtweise und Einstellung zu Veränderungen und Motivationsfaktoren interessieren mich. Mein Name ist Britta Oehlich, ich arbeite bei der DB Regio Bus im Marketing und habe nebenberuflich ein Forschungsprojekt aufgesetzt. Gemeinsam mit der Technischen Hochschule Mittelhessen, und unterstützt von der DB AG, forsche ich zum Thema Veränderungen und Motivation. Denn Veränderungen in unserem Arbeits- und persönlichem Umfeld wirken auf uns unterschiedlich. Die Wirkung ist abhängig von der tatsächlichen und empfundenen Änderung sowie von Ihrer und meiner Grundeinstellung zu Veränderungen.

Um diese Unterschiede herauszufinden, benötige ich Ihre Mithilfe! Anbei finden Sie einen Link zu meiner Umfrage. Ich bitte Sie, den Link anzuklicken. Meine Umfrage dauert 10-15 Minuten. Wichtig: Ihre Teilnahme ist freiwillig, Ihre Antworten werte ich anonym aus und ich erfülle die Anforderungen des Konzernbetriebsrats, des Konzernmitarbeiterdatenschutzes und der DB AG.

Machen Sie mit! Ihre Antwort ist wichtig für mich. Die Forschungsergebnisse und meine davon abgeleiteten Handlungsempfehlungen stelle ich bei Abschluss meiner Forschungsarbeit der DB AG zur möglichen Umsetzung zur Verfügung.

Vielen Dank!

Ihre Britta Oehlich

## **Anschreiben im Fragebogen nach Aktivierung des Onlinelinks**

Sehr geehrte Kollegin, sehr geehrter Kollege,

ich, Britta Oehrich (DB Regio Bus) danke Ihnen, dass Sie sich Zeit nehmen, um meinen Fragebogen zu beantworten. Ich habe den Fragebogen in mehrere Themenblöcke aufgeteilt, die ich jeweils mit einer kurzen Überschrift erklärend einleite.

Wie wird der Fragebogen ausgefüllt?

Ihre Antworten im Fragebogen beziehen sich auf Ihre persönliche Meinung. Mit jeder Antwort drücken Sie Ihre Einstellung aus.

Lesen Sie bitte jede Frage durch und beantworten Sie sie zügig. Lassen Sie nach Möglichkeit keine Frage aus. Bitte beantworten Sie die Fragen durch das Anklicken der Kästchen hinter jeder Frage. Sie haben fünf Antwortmöglichkeiten zwischen „stimme voll zu, stimme eher zu, teils-teils, stimme eher nicht zu, stimme überhaupt nicht zu“.

Während der Bearbeitung können Sie vorwärts und rückwärts blättern.

Wichtige Information zur Freiwilligkeit und Anonymität

Ihre Teilnahme ist freiwillig. Mit Ihren Antworten wird vertraulich umgegangen und sie werden anonym ausgewertet. Es ist technisch ausgeschlossen, dass Rückschlüsse auf Personen gezogen werden können. Diese Regelung entspricht der Vereinbarung zwischen Konzernbetriebsrat, Konzernmitarbeiterdaten-schutz und Arbeitgeber.

Falls Sie während der Beantwortung Fragen oder Interesse an den Ergebnissen haben, melden Sie sich bitte bei mir

- per E-Mail [b\\_oehrich@gmx.de](mailto:b_oehrich@gmx.de) oder [Britta.Oehrich@deutschebahn.com](mailto:Britta.Oehrich@deutschebahn.com)

- per Telefon 0176/96 61 90 79 oder 069/265 59453

Ich danke Ihnen sehr für Ihre Teilnahme!

Ihre Britta Oehrich

## Appendix A Questionnaire

Bei der Beantwortung dieser Fragen geht es um Ihre generelle Einstellung zu Veränderungen.

	Antwortmöglichkeit				
	Stimme voll zu	Stimme eher zu	Teils, teils	Stimme eher nicht zu	Stimme überhaupt nicht zu
<b>Generelle Einstellung zu Veränderungen</b>					
Ich würde einen Tag voller Routine einem Tag voller Überraschungen vorziehen.					
Veränderungen verbinde ich meistens mit zu erwartenden Schwierigkeiten.					
Wenn ich über Veränderungen informiert werde, bin ich häufig ein wenig beunruhigt.					
Wenn Dinge nicht nach Plan verlaufen, macht mich das nervös.					
Ich ändere meine Meinung nicht so leicht.					
Was in der Zukunft mit mir passiert, hängt maßgeblich von mir selbst ab.					
Manchmal erwische ich mich dabei, dass ich Veränderungen meide, obwohl ich weiß, dass sie gut für mich sind.					

## Appendix A Questionnaire

Bei den nachfolgenden Fragen bitte ich Sie, sich die letzte Veränderung z.B. eine Reorganisation, die in Ihrer Organisationseinheit in den letzten Jahren durchgeführt wurde und von der Sie betroffen waren, zur Beantwortung der Fragen in Erinnerung zu rufen.

	Antwortmöglichkeiten				
	Stimme voll zu	Stimme eher zu	Teils, teils	Stimme eher nicht zu	Stimme überhaupt nicht zu
<b>Vertrauen in Veränderungen</b>					
Ich weiß, dass ich auch nach der letzten Veränderung meine Arbeit erfolgreich erledige.					
Ich war verunsichert nach der letzten Veränderung.					
Ich habe das Gefühl, dass ich mit der letzten Veränderung gut umgehen konnte.					
Ich verfüge über die nötigen Fähigkeiten, so dass ich die letzte Veränderung erfolgreich umsetzen konnte.					
Ich denke, ich kann alles lernen, was aufgrund der letzten Veränderung notwendig ist für meine Aufgaben.					
<b>Notwendigkeit der Veränderung</b>					
Es machte keinen Sinn für meine Organisationseinheit, die letzte Veränderung anzustoßen.					
Es gibt viele rationale Gründe, weswegen die letzte Veränderung durchgeführt worden ist.					
Die Zeit, die wir für die Umsetzung der letzten Veränderung aufgebracht haben, hätten wir nützlicher einsetzen sollen.					
Ich denke, dass meine Organisationseinheit im Großen und Ganzen von der letzten Veränderung profitiert hat.					
Die letzte Veränderung wird die Effizienz meiner Organisationseinheit steigern.					
Die letzte Veränderung unterstützt die Zielerreichung meiner Organisationseinheit.					
Durch die letzte Veränderung konzentriert sich meine Organisationseinheit auf wichtige Themen und Prozesse.					
<b>Verhalten der Führungskräfte</b>					
Unsere Führungskräfte unterstützen persönlich und sichtbar die letzte Veränderung.					
Unsere Führungskräfte haben sich in Reden klar für die Umsetzung der letzten Veränderung ausgesprochen.					
Wir haben viel Zeit für die letzte Veränderung aufgebraucht, ohne dass unsere Führungskräfte diese Veränderung wirklich wollten.					
Ich habe den Eindruck, dass sich unsere Führungskräfte mit der Entscheidung zur letzten Veränderung schwer taten.					
Unsere Führungskräfte haben bei der Umsetzung der letzten Veränderung gute Arbeit geleistet.					

## Appendix A Questionnaire

<b>Persönliche Auswirkung von Veränderungen</b>					
Ich bin besorgt, dass ich meinen Status im Unternehmen verliere, wenn eine ähnliche Veränderung erneut umgesetzt wird.					
Die Veränderung bot mir eine Entwicklungsmöglichkeit.					
Nach der Veränderung sind meine Aufgaben sinnvoller als vorher.					
Ich profitiere persönlich von der Veränderung.					
Langfristig glaube ich, dass es gut für mich ist, wenn meine Organisationseinheit weiterhin kontinuierlich Veränderungen durchführt.					

## Appendix A Questionnaire

Nun geht es um Ihre Einstellung gegenüber Themen wie Allgemeinwohl und gesellschaftliche Verantwortung. Ich möchte herausfinden, ob es Zusammenhänge zwischen diesen Themen und der Veränderungsbereitschaft gibt.

	Antwortmöglichkeiten				
	Stimme voll zu	Stimme eher zu	Teils, teils	Stimme eher nicht zu	Stimme überhaupt nicht zu
<b>Einstellung gegenüber Politik allgemein</b>					
Das Wort „Politik“ hat einen bitteren Beigeschmack.					
Kompromisse und Gegengeschäfte in der politischen Entscheidungsfindung sagen mir nicht zu.					
Politiker(innen) sind mir ziemlich gleichgültig.					
Für mich ist Politik im Allgemeinen positiv besetzt.					
<b>Gemeinwohlorientierung und gesellschaftliche Verantwortung</b>					
Ich betrachte das Gemeinwohl als bürgerliche Pflicht.					
Ich engagiere mich im hohen Maße gemeinnützig.					
Mir ist es wichtig, dass die öffentliche Hand sinnvolle Aufgaben erbringt.					
Ich würde es vorziehen, dass Beamte und Angestellte des öffentlichen Dienstes das tun, was für die Allgemeinheit das Beste ist, selbst wenn es meinen persönlichen Interessen zuwider läuft.					
Beamte und Angestellte des öffentlichen Dienstes sollten primär gegenüber der Öffentlichkeit und nicht gegenüber ihrem Vorgesetzten verantwortlich sein.					
<b>Soziales Mitgefühl</b>					
Ich habe wenig Mitleid mit jenen Menschen, die nicht bereit sind, den ersten Schritt zu tun, um sich selbst zu helfen.					
Es ist schwierig für mich, nicht zu helfen, wenn ich Menschen in Not sehe.					
Ich mache mir um das Wohlergehen mir nicht bekannter Menschen keine Sorgen.					
<b>Bereitschaft zur Uneigennützigkeit</b>					
In der Gesellschaft etwas zu bewegen, bedeutet mir mehr als mein persönlicher Erfolg.					
Die Menschen sollten der Gesellschaft mehr zurückgeben als sie von ihr bekommen.					
Ich bin jemand, der persönliche Nachteile in Kauf nehmen würde, nur um anderen zu helfen.					
Ich bin der Meinung, dass die Erfüllung meiner bürgerlichen Pflichten wichtiger ist als die Erfüllung meiner eigenen Wünsche.					
Ich bin bereit, Opfer zum Nutzen der Gesellschaft zu bringen.					



## Appendix A Questionnaire

Um Ihre Antworten zur Veränderungsbereitschaft besser zu verstehen und interpretieren zu können, bitte ich Sie anzukreuzen, wie stark sich die Veränderung auf Sie ausgewirkt hat.

	Antwortmöglichkeiten				
	Stimme voll zu	Stimme eher zu	Teils, teils	Stimme eher nicht zu	Stimme überhaupt nicht zu
<b>Persönliche Betroffenheit der Veränderung</b>					
Die Veränderung hatte starke positive Auswirkungen auf mich und meine Arbeit in meiner Organisationseinheit (z.B. Arbeitsplatzwechsel, Veränderung der Aufgabeninhalte, Wechsel der Abteilung, etc.).					
Die Veränderung hatte starke negative Auswirkungen auf mich und meine Arbeit in meiner Organisationseinheit (z.B. Arbeitsplatzwechsel, Veränderung der Aufgabeninhalte, Wechsel der Abteilung, etc.).					

## Appendix A Questionnaire

In den nachfolgenden Fragen geht es mir darum, mehr über Ihre Einstellung zum Thema Sicherheit, zu Ihren Arbeitsinhalten und Ihrer Organisationseinheit zu erfahren.

	Antwortmöglichkeiten				
	Stimme voll zu	Stimme eher zu	Teils, teils	Stimme eher nicht zu	Stimme überhaupt nicht zu
<b>Einstellung zum Thema Sicherheit</b>					
In meinem Leben spielt das Thema Sicherheit eine große Rolle.					
Bei meiner Berufswahl habe ich mehr auf die Arbeitssicherheit als auf die Arbeitsinhalte geachtet.					
Es ist mir wichtig zu wissen, dass mein Arbeitsplatz sicher ist.					
Die Vorstellung meine Arbeit verlieren zu können, beunruhigt mich.					
<b>Einstellung zu meinen Arbeitsinhalten</b>					
Meine Kompetenzen passen gut mit den Inhalten meiner Arbeit überein.					
Meine Arbeit erfüllt meine Erwartungen an eine Arbeitsstelle.					
Meine jetzige Arbeit bietet mir alles, was ich von einer Arbeit erwarte.					
Ich bin mit meiner Arbeit sehr zufrieden.					
<b>Einstellung zur meiner Organisationseinheit</b>					
Mir gefällt es sehr für meine Organisationseinheit zu arbeiten.					
Ich werde in fünf Jahren noch in dieser Organisationseinheit oder in einem anderen Geschäftsfeld der DB AG arbeiten.					
Ich kann meine potenzielle Leistung in meiner Organisationseinheit entfalten.					
Meine persönlichen Werte passen gut mit denen meiner Organisationseinheit überein.					
Ich kann meinen Werten in meiner Organisationseinheit treu bleiben.					
Meine Identifikation mit meiner Organisationseinheit hat sich im Laufe meiner Betriebszugehörigkeit positiv verändert.					
Meine Identifikation mit meiner Organisationseinheit hat sich im Laufe meiner Betriebszugehörigkeit negativ verändert.					

## Appendix A Questionnaire

Abschließend bitte ich Sie noch um einige statistische Angaben. Bitte füllen Sie alles aus. Wichtig, ich kann keinen Rückschluss auf Ihre Person ziehen!

<b>Bitte geben Sie Ihr Geschlecht an</b>	
Weiblich	
Männlich	
<b>Bitte kreuzen Sie Ihr Alter an</b>	
unter 21 Jahren	
21 bis 30 Jahre	
31 bis 40 Jahre	
41 bis 50 Jahre	
51 bis 60 Jahre	
über 60 Jahre	
<b>Bitte geben Sie Ihren höchsten Bildungsabschluss an</b>	
Ausbildung oder Lehre	
Universitäts-, Fachhochschul- oder Berufsakademie-Abschluss	
Sonstiges	
<b>In welchem Beschäftigungsverhältnis arbeiten Sie? Mehrfachantworten möglich</b>	
Zugewiesene Beamtin/zugewiesener Beamter	
Beurlaubte Beamtin/beurlaubter Beamter	
Verbeamtete Führungskraft	
Tarifikraft (nicht verbeamtet)	
Führungskraft (nicht verbeamtet)	
<b>Kreuzen Sie bitte die Dauer Ihrer Betriebszugehörigkeit an</b>	
unter 5 Jahren	
5 bis 14 Jahre	
15 bis 24 Jahre	
25 bis 34 Jahre	
Über 34 Jahre	

## Appendix B Independent sample t-test readiness for change

### Appendix B Independent sample t-test readiness for change

Independent sample t-test for readiness for change and age group per role

**Table B.1 Independent sample t-test: readiness for change per role and age group 21-30 years**

Mean values	Civil servant*	Non-civil servant**	P value of difference
General readiness for change		3.40	
Specific readiness: Self-efficacy		4.15	
Specific readiness: Appropriateness		3.51	
Specific readiness: Management support		3.70	
Specific readiness: Personally beneficial		3.61	

\* N=0

\*\*N=50

A t-test was not possible in order to a lack of civil servants.

**Table B.2 Independent sample t-test: readiness for change per role and age group 31-40 years**

Mean values	Civil Servant*	Non-civil servant**	P value of difference
General readiness for change	3.11	3.37	0.392
Specific readiness: Self-efficacy	3.45	4.23	0.200
Specific readiness: Appropriateness	2.68	3.41	0.088
Specific readiness: Management support	3.50	3.51	0.989
Specific readiness: Personally beneficial	3.15	3.36	0.620

\* N=4

\*\*N=140

## Appendix B Independent sample t-test readiness for change

**Table B.3 Independent sample t-test: readiness for change per role and age group 41-50 years**

Mean values	Civil Servant*	Non-civil servant**	P value of difference
General readiness for change	3.36	3.41	0.568
Specific readiness: Self-efficacy	4.17	4.17	0.956
Specific readiness: Appropriateness	3.24	3.39	0.327
Specific readiness: Management support	3.55	3.49	0.683
Specific readiness: Personally beneficial	3.30	3.29	0.950

\* N=47

\*\*N=138

## Appendix C Regressions for civil servants

Regressions of concepts readiness for change and PSM for civil servants

**Table C.1 Public Service Management and general readiness for change: Regressions for civil servants**

Dependent Variable: General readiness for change		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	0.106	0.160	0.060
	Public interest	-0.084	-0.124	0.148
	Self-sacrifice	0.040	0.062	0.466
	Compassion	0.059	0.092	0.286

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

Adj. R square 0.105

a. N=130

**Table C.2 Public Service Management and specific readiness: self-efficacy: Regressions for civil servants**

Dependent variable Specific readiness: Self-efficacy		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	0.083	0.119	0.187
	Public interest	0.004	0.005	0.952
	Self-sacrifice	0.054	0.080	0.374
	Compassion	0.005	0.008	0.933

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

Adj. R square -0.012

a. N=130

**Table C.3 Public Service Management and specific readiness: appropriateness: Regressions for civil servants**

Dependent variable Specific readiness: Appropriateness		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	0.151	0.156	0.074
	Public interest	-0.123	-0.125	0.154
	Self-sacrifice	0.081	0.087	0.321
	Compassion	-0.062	-0.067	0.454

\*, significant at the 0.05 level (2-tailed).

\*\*, significant at the 0.01 level (2-tailed).

Adj. R square 0.053

a. N=130

## Appendix C Regressions for civil servants

**Table C.4 Public Service Management and specific readiness: management support: Regressions for civil servants**

Dependent variable Specific readiness: Management support		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	0.089	0.118	0.183
	Public interest	-0.055	-0.072	0.417
	Self-sacrifice	0.043	0.060	0.504
	Compassion	-0.078	-0.108	0.233

\*. significant at the 0.05 level (2-tailed).

\*\*. significant at the 0.01 level (2-tailed).

Adj. R square 0.016

a. N=130

## Appendix D Regressions for non-civil servants

Regressions for concepts readiness for change and PSM for non-civil servants

**Table D.1 Public Service Management and specific readiness: appropriateness: Regressions for non-civil servants**

Dependent variable Specific readiness Appropriateness		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM	Policy-making	-0.010	-0.012	0.831
	Public interest	-0.053	-0.061	0.238
	Self-sacrifice	0.027	0.0311	0.550
	Compassion	-0.049	-0.054	0.306

\*, significant at the 0.05 level (2-tailed).  
 \*\*, significant at the 0.01 level (2-tailed).  
 Adj. R square 0.045  
 a. N=360

**Table D.2 Public Service Management and specific readiness: management support: Regression for non-civil servants**

Dependent variable Specific readiness: Management support		Regression coefficient B	Standard Beta coefficient	p-value (Sig.)
Independent variable: PSM <sup>a</sup>	Policy-making	0.036	0.045	0.411
	Public interest	0.055	0.069	0.194
	Self-sacrifice	0.052	0.064	0.226
	Compassion	-0.020	-0.024	0.647

\*, significant at the 0.05 level (2-tailed).  
 \*\*, significant at the 0.01 level (2-tailed).  
 Adj. R square 0.001  
 a. N=360



## Appendix E Independent sample t-test need for security

### Appendix E Independent sample t-test need for security

Independent sample t-test for need for security and age group per role

**Table E.1 Independent sample t-test: need for security per role and age group 21-30 years**

	Civil servant	Non-civil servant
Mean		3.31
St. Deviation		0.881
N		50
P value of difference		

A one-sample t-test was not possible in order to a lack of civil servants.

**Table E.2 Independent sample t-test: need for security per role and age group 31 to 40 years**

	Civil servant	Non-civil servant
Mean	3.50	3.42
St. Deviation	0.540	0.807
N	4	140
P value of difference		0.844

**Table E.3 Independent sample t-test: need for security per role and age group 41 to 50 years**

	Civil servant	Non-civil servant
Mean	3.49	3.33
St. Deviation	0.678	0.642
N	47	138
P value of difference		0.153

## Appendix E Independent sample t-test need for security

**Table E.4 Independent sample t-test: need for security per role and age group 51 to 60 years**

	Civil servant	Non-civil servant
Mean	3.59	3.67
St. Deviation	0.674	0.692
N	76	54
P value of difference	0.505	

**Table E.5 Independent sample t-test: need for security per role and age group over 60 years**

	Civil servant	Non-civil servant
Mean	3.75	3.38
St. Deviation	0.592	0.829
N	11	4
P value of difference	0.344	

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